STIC-Biotech/ChemLib

118457

From:

Whiteman, Brian

Sent:

Thursday, April 01, 2004 1:00 PM

To:

STIC-Biotech/ChemLib

Subject:

sequence search

09/845,416 4/30/01 Xiao Xiao 4/30/01

search nucleotides 900-3000 of SEQ ID NO: 2 against us patent and us patent application databases search nucleotides 1000-3000 of SEQ ID NO: 6 against us patent and us patent application databases search nucleotides 600-3000 of SEQ ID NO: 9 against us patent and us patent application databases search nucleotides 1800-3100 of SEQ ID NO: 10 against us patent and us patent application databases search nucleotides 900-3000 of SEQ ID NO: 12 against us patent and us patent application databases search nucleotides 900-2500 of SEQ ID NO: 14 against us patent and us patent application databases

Thanks,

Brian Whiteman Remsen, 2D14 mail box 2C18 Patent Examiner - Art Unit 1635 United States Patent and Trademark Office (571) 272-0764

Searcher:
Phone:
Location:
Date Picked Up: 4/1/004
Date Completed: U/ Y/01
Searcher Prep/Review:
Clerical:

Online time:_

TYPE OF SEARCH: NA Sequences:	6
AA Sequences:	
Structures:	
Bibliographic:	
Litigation:	
Full text:	
Patent Family:	
Other:	

/ENDOR/COST (w	here applic.)
STN:	
DIALOG:	
Questel/Orbit:	
DRLink:	
Lexis/Nexis:	
Sequence Sys.:	100 tl
WWW/Internet:_	
Other (specify):	

1182 59.1 4498 6 AAD37258 Ader 1180 59.0 5339 6 ABK81998 Abk81998 DNA. 1013 50.6 3510 6 AAD37240 Hums 1013 50.6 4476 6 AAD37259 Ader	8 1004 50.2 13815 2 AAV18885 Aav18885 Mus mu 9 1004 50.2 13815 6 ABK81960 Abk81960 CDNA e	0 1004 50.2 13815 6 ABI99799 AD199799 AD199799 MOUSE 1 1004 50.2 19307 2 AAT27558 A=227558 Shuttl 8 835 41.7 1821 6 AAD37241 A=637241 Human 3 727 36.3 5417 6 ABK81997 ADK81997 DNA er	4 677 33.9 4402 3 AA248588 AZ48588 AZ48588 AZ700 5 678 33.9 4414 6 AAD37231 Aad37220 Aad37221 Human 7 677 33.8 1667 6 AAD37235 Aad37235 Human	8 666.4 33.3 3446 6 AAD37242 AAG34242 Human of 3 9 618.8 AAG48569 A 204 8 20.7 4402 3 AAZ48567 A 206 8.0 614.2 30.7 4402 3 AAZ48567 A 206 8.0 614.2	1 537.8 26.9 3275 1 AAN97129 AAN97129 FATC. 2 448 22.4 1434 6 AAD37243 AAG37243 Human	408.2 20.4 11096 6 408 20.4 10705 7 397 19 8 6045 2	O THE STATE OF THE	н	AAD37234 ID AAD37234 standard; DNA; 3999 BP.	AAD37234;	21-AUG-2002 (first entry)	Human dystrophin minigene delta3990.	Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.	Homo sapiens.	WO200183695-A2.	08-NOV-2001.	27-APR-2001; 2001WO-US013677.	28-APR-2000; 2000US-0200777P.	(XIAO/) XIAO X.	Xiao X $_i$	WPI; 2002-049342/06.	New dystrophin minigene for treating Duchenne or Becker muscular		gene. Brannlo 1. Bano 16-17.	Example 1; rage 40-47; /LDP; English.				
		υ						X	¥0;	¥ ¥ :	\$	3	\$ & & & !	¥8¥	PN XX	10 X	i ii X	PR	¥ & !	₹ Б \$	(E)	¥ E !	T L d	I X E	Z X	មួម	នូមូខូ	ខម	ខ្លួន
						•	143						,											4					
gen Ltd.		time 516.337 Seconds nt alignments) 177 Million cell updates/sec	tcaaccacgagactcaaaca 2001			6747726								l by chance to have a the result being printed,	istribution.		Description			Add37237 Human dys						Abk82002 DNA encod Aan90338 Sequence	Abk81959 CDNA enco Abt10904 Human bre	Abs69900 Human dys Abs70403 Human bon	Human Human
GenCore version 5.1.6 : (c) 1993 - 2004 Compugen	, using sw model	2004, 11:55:32 ; Search tim (without a 16463.377	-09-845-416-6_COPY_1000_3000 101 ggcagttcattgatggagaggtc	JC , Gapext 1.0	1s, 2124099041 residues	lying chosen parameters:	200000000	Match 0% Match 100% first 45 summaries	29Jan04:*	*: \$086TUE *: \$086TUE	geneseqn2000s:* geneseqn2001as:*	41200158: * 4120028: *	geneeeqn.2003bs:* geneeeqn2003bs:* geneeeqn2003cs:* geneeeqn2004s:*	oer of results predicted by equal to the score of the	analysis of the total scor	SUMMARIES	th DB ID		ישים	ρvu	90	oω	9 9 1	o o o	യ വ	wн	φφι	57 6 ABS69900 77 6 ABS70403	999
Copyright	ic search,	April 4, 2	US-09-845-4 2001 1 ggcagttca	IDENTITY NUC Gapop 10.0 ,	373863 seqs,	hits satisfying	length: 0 length: 2000	Minimum Ma Maximum Ma Listing fi	Genesed_29Ja				••	the number of than or equal	red by an		Query Match Length				. 4	4.4.	2. 4. 4. 4. 4. 4.	9 0 0 4 4 -	 	٠. ط د د د د	 	59.1 13957 59.1 13957 59.1 13977	
	c - nucleic	Ą	core: 20	table: ID Ga	33	oę	sed]		z', 		ω 4a. π		0	. 0	is derived by	di	Ou Score Ma	•	4	-								1182.6 5	
	M nuclei	no on:	itle: erfect s equence:	coring t	earched:	otal number	inimum DB aximum DB	ost-processing	atabase					Pred.	and		esult No.											2002	

```
1900 GTCCTACAGGATGCTACCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAG 1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2980 ATCAACCACGAGACTCAAACA 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
  d
                                                                                                                                                                                                                                                     1059
                                                                                                                                                                                                                                                                                                                                                                                                                 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1720 CCTACTCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCC 1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1060 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAAT 1119
                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1480 CAACATAAGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC 1539
dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene deltra3990 contraining nucleotides 1-1668 (N-terminus, hinge H1 and rods R1 and R2), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TICCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAG 960
                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                        1000 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                             GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                         121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                              1120 GAIGIGGAAGIGGIGAAAGACCAGTITCAIACTCAIGAGGGGIACAIGAIGAGGAITIGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1180 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .240 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1360 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1420 ACAAGGAAAATGGAGGAAGAAGCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1540 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1600 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGTTCTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    recerricititadaagaccagccigacciagcreciegacreaccactariagagccicr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Trececendeacergaaaagrirerrecergeerracagaagergaaacaacaar
                                                                                                                                                                                                                  GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTACTCAGACTGTTACTCTGGTGACACACCTGTGGTTACTAAGGAAACTGCCATCTCC
                                                                                                                                                                             Gaps
                                                                                                                                                                             ö
                                                                                                                                    DB 6; Length 3999;
                                                                                                 Sequence 3999 BP; 1223 A; 907 C; 933 G; 936 T; 0 U; 0 Other;
                                                                                                                                                                           Indels
                                                                                                                                                                         ·
0
                                                                                                                                    Query Match

100.0%; Score 2001;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 2001; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 0991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                           61
  8888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                           ਨੇ
                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

වු	1900	STAAAAGAG 19	
δλ	961	CCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC 10	
qQ	1960	GATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTATCAC 20	
δ	1021	AACCTGGATGAAAACAGCCAAAAAATCCTGGAGATCCCTGGAAGGTTCCGATGATGCAGTC 108	0 8
Dβ	2020	TGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGGTC 20	
\$ 65 65	1081	CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAATCT 114	4 ε O ε
ìò	4	ATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT 12	0
· අ	4	CICAACATIAGGICCCATITGGAAGCCAGTICTGACCAGTGAAAGCGTCTGCACCTTTCT 219	O)
ò	0	CA	ø
QQ QD	2200	scaggaacticiggtgtgggctacagctgaaagatgatgaattaagccggcaggca	
y a	1261	ATTGGAGGGGACTTTCCAGCAGTTCAGAAGCAGAAGGATGTACATAGGGCCTTCAAGAGG 132 ####################################	0 6
3 8	4 6	AGGCCACLIIICCAGCACLIIICAGAAGCACACAACAACAAAGAAGAAAGAAAAAAAAA	
₽ 40	N I	ന	79
ò	1381	CAGGAGCCCAGAGAGCTGCCTCCT 14	
qq	2380	AGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCCAGAGAGCTGCCTCCT 24	99
δ	1441	AGCAGGCTGAGGAGGTCAATACT 15	0
qq	2440	GABGAGACCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 24	66
δ	1501	in	9
g	2500	Frodgaaaatrgaaccrockcroccroscroscagagaaarrgargagaccrr 25	60
& t	56	AAGCT 16	20
Q ·	Q ·	9 V	
ð.	62	ن ق	
DP C	2620	r 26	49
čo i	68	CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTGAGC 174	
ag	ထ	UGAGAAAGICAAGGCACTICGAGGAGAAAITGCGCCICIGAAAGAGAAACGIGAGC 27	n N
පි ස්	4 4	CACGICAATGACCTIGCTCGCCAGCTTACCACTTTGGGCATTCAGGTCTCACCGTATAAC 180	0 0
gg	2740	.AAIGACCTIGCICGCCAGCTIACCACTIGGGCAITCAGCICICACCGIAIAAC 2/	n .
č	0	CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC 186	00
g G	2800	cacactetegaagacetgaacaccagatggaagettetgcaggtggeegtegagaec 28	o G
ζŏ	98	σ	50
q	2860	GAGTCAĞĞCAĞCTĞCATGAAĞCCCACAĞĞĞACTTTĞGTCCAĞCATCTCAĞCACTTTCTT 29	61
ζŏ	1921	BAGAGCCATCTCGCCAAACAAGTGCCCTACTAT 19	
QQ	2920	ccacgiciterccagggicerigggaggaggeerictegeeaacaaaggeeeragii 29°	79
δλ	1981	ATCAACCACGAGACTCAAACA 2001	
Dp	6	TCAACCACGAGACTCAAACA 30	

2116

2176

420

2236

480

2296

009

540

2356

2416

99

2476

780

720

2536

2596

900

840

2656

2716 1020

096

1080 2836 1140

2896 1200 2956 1260 3016

```
1937 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG 1320
                                                                                                                               1997 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                            AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                    TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                          GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                        2117 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2177 ACAAGGAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2237 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACACGCAACTGCTGTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2357 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2477 ccracrcadacrerracrcredidacacaccrereregriacraaggaaacreccarcrec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2657 Grecracadgargeraceceraaggaracerecaaggareceragaagaere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAAGGAAAATGGAGGAAGGCCTCTTGGACCTGATCTTGAAGACCCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601 GAACAACTIAAGGTATIGGGAGAICGAIGGGCAAACAICTGIAGAIGGACAGAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2417 reserrerrinada de asceres estres en estas e
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2897 crcaacarradgreccarringaadgecagricigaceagregaadgegrergeacerrrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661 TGGGTTCTTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTACTCAGACTGTTACTCTGGTGACACCAGTGGTTACTAAGGAAACTGCCATCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2777 AACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               crecaesaacricresrerescracaecreaaaaaareareaariraaeceseeaecer
                                                                 241
                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                 2057
                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                       상 원
                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                      8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGGCACAAGGAGAGATTTCTAAT 1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprisaing dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 1936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATTATCGTGCCTTCTTTCTGCTGAGGACACATTGCAAGGAGAGGAGAGATTTCTAAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                Human, dystrophin minigene, muscular, gene therapy, utrophin, s
adeno-associated virus; AAV, Duchenne muscular dystrophy; DMD,
Becker muscular dystrophy, ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4966 BP; 1403 A; 1216 C; 1232 G; 1115 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 6; Length 4966;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
                                                                                                                                                                                                                                                                                                  Adeno-associated virus vector plasmid, AAV-MCK-delta3990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 2001; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 59-60; 71pp; English.
                                                                                                  멾
                                                                                              AAD37256 standard; DNA; 4966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 100.
Matches 2001, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                 21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-NOV-2001
                                                                                                                                                            AAD37256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene.
```

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

WPI; 2002-049342/06.

Example 1; Page 67-68; 71pp; English.

27-APR-2001; 2001WO-US013677.

2000US-0200777P

28-APR-2000; (XIAO/) XIAO

×

```
3196
                                                                                                                                                                                                                                                                                3316
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3676
                                                                                                                                                                                                                                                                                                                                                                                                                         3436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3736
                                                                                                                                                                                                                                                                                                                                                     3376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGGAGGCGACTITCCAGCAGITCAGAAGCAGAACGAIGTACAIAGGGCCTICAAGAGG 3076
                                                                                                                                                                                                     GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGACGTCAATACT
                                                                                                                                                                                                                                              GAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                   GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG
                                                                                                     ACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT
                                                                                                                                     GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                              GAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTT
                                                                                                                                                                                                                                                                                                                  GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                                                                                                                                                                                                                                                                                                                     GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                     GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCTCGAGAAAGTCAAGGCACTTCGAGGAAATTGCGCCTCTGAAAGAGAAAGAGGCTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cacercaardacerrececagerraceaerrregecarreaeerereaeeraaaae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCAGCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ceasitcaescascrecarcaaescccacaescarringsrecascarcresecarringr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Archaecaceaeaerchaeca 3757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAACCACGAGACTCAAACA 2001
                                                                   3077
                                                                                                                                     3137
                                                                                                                                                                                                                                                                                3257
                                                                                                                                                                                                                                                                                                                                                   3317
                                                                                                                                                                                                                                                                                                                                                                                                                         3377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1981
                                                                                                     1381
                                                                                                                                                                         1441
                                                                                                                                                                                                          3197
                                                                                                                                                                                                                                              1501
                                                                                                                                                                                                                                                                                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                     1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3737
                                 1321
                                                                 બ્
                                                                                                                             ન્
                                                                                                                                                                                                                                          ⋩
                                                                                                                                                                                                                                                                            छ
                                                                                                                                                                                                                                                                                                                                                Я
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               छ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
পূ
                               ≿
                                                                                                     ⋩
                                                                                                                                                                       ≿
                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                         સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ≿
```

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds. Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3990 BP. AD37262

D AAD37262

C AAD37262;

C AAD37262

2020 2320 1900 2080 The present invention relates to an isolated nuclectide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specifin gene, Hi and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a cytomegalovirus (CWV) promoter and a small polyA signal sequence GGCAGTTCATTGATGGAGGGGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1840 240 180 360 420 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGAACAAGTCAGGGTCAATTCTCTC GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA GTÄTTATCGTGGCTTCTTCTGCTGAGGACACATTGCAAGGAGGAGAGTTTCTAAT GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA AAATTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAGCAAATTTACATAGAGTTTTAATG ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAACAGAAAAA Gaps ö Sequence 4990 BP; 1439 A; 1185 C; 1208 G; 1158 T; 0 U; 0 Other; DB 6; Length 4990; Indels ö 100.0%; Score 2001; 100.0%; Pred. No. 0; ive 0; Mismatches Query Match Best Local Similarity 100. Matches 2001; Conservative 1781 61 1841 121 181 1961 241 2021 2081 2141 2201 2261 301 361 421 481 g d à 원 à d à g à g ò ď ö 유 ò

	AAD37237 AAD37237 AAD37237 XX XX AAD37237; XX DT 21-AUG-2002 (first entry) XX XX XX Human dystrophin minigene; muscular; gene therapy; utrophin; spectrin; XX XX XX XX XX Muman; dystrophy; ds. XX	WPI; 2002-049342/06. XX New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin PT gene. XX Example 1; Page 48-49; 71pp; English. XX CC The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 comming and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is
ACTCACATGGTGGTAGTTGATGAATCTAGTGGAACAGCAACTGCTGCTTTGGAA	1021 ACCTGGATGAACAATGGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC 2800 1021 AACCTGGATGAAACAGCCAAAAAATTGAAGCTCCTGGAAGGTTCAACATGAAGCTCAACACACAGATGTTTATCAC 2800 1081 AACCTGGATGAAACAGCCAAAAAATTCCTGAAGGTTCCTGGAAGGTTCCGATGATGCAGTC 2860 1081 CTGTTACAAAAACACCAAAAAATTCCTGAAGGTTCCTGAAGGTTCCGAAGATCT 2920 1141 CTGTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAAGGTTCGGAAAAAGTCT 1200 2921 CTGTACAAAGACGTTTGGAAACTTCTAACATGAACTTCAAGTGGAAGCTTCTGAACATTTGGAAAAAGTTCT 2920 1141 CTGAACATTAGGACCATTTGGAAACTTCTAACATTAGGAACCTTTCTTCT 2920 1201 CTGCAGGAACTTTCGGAAAACTTCTTCTAACATTAGGACCACTTCTAACATTCTAACATTCTAACATTAAGCTCCATTTTTCTAACATTAAGCTCCATTTTTTCTAACATTAAGACCAGCACACTTCTAACATTAAGCTCCAACATTCTAACATTAAACATTAAGCTCCAAGAACTTTTTTTT	

1759 GTCCTACAG 961 CTGATGAAA 1819 CTGATGAAA 1021 AACCTGGAT 1879 AACCTGGAT	1081 CTGTTACAA 1939 CTGTTACAA		1261 ATTGGAGGC 2119 ATTGGAGGC 1321 GAATTGAAA 1321 GAATTGAAA	1381 ACAGAGCAG 2239 ACAGAGCAG 1441 GAGGAGAGA 2299 GAGGAGAGA	1501 GAGTGGGAA 2359 GAGTGGGAA 1561 GAAAGACTC 1561 GAAAGACTC		1741 CAGGTCAAI 2599 CAGGTCAAI 1801 CTCAGGACT 2659 CTCAGGACT	1861 CGAGTCAGG 2719 CGAGTCAGG 1921 TCCACGTCT 2779 TCCACGTCT 2779 TCCACGTCT 1981 ATCAACCAC
a & a & a	& 8 &	3 8 8 8	8888	8 8 8	8 8 8	8 8 8	8 6 8 6	> 8 > 8 >
useful for treating Duchenne muscular dystrophy (DMD) and Becker muscula dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta3849 containing nucleocides 1.1668 (N-terminus, hinge H1 and rods R1, R2), 8059-10227 (rods R22, R33 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids) Sequence 3858 BP; 1189 A; 866 C; 905 G; 898 T; 0 U; 0 Other; Duery Match Duery Match Seet Local Similarity 93.0%; Pred. No. 0;	Matches 1860; Conservat 1 GGCAGTTCATTC 1000 GGCAGTTCATTCATTCATTCATTCATTCATTCATTCATTC	61 GTATTATCGTGGCTTCTTCTGCTGAGGACACATTGCAAGGAGAGATTTCTAAT 1060 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAAT 121 GATGTGGAGGACACATTCTTTCTGCAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT 121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTATCTAGGAGAGATTTGAA 121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGAGATTTGACA	1180 1180 241	301 IGGGAATGCCCAGGGTAGCCAGGAAAACAAAGCAATTACATAGAGTTTTAATG 1300 TGGGAATGCCTCAGGGTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATG 1300 TGGGAATGCCTCAGGGTAGCTAGCATGAAAAAAAAAAATTACATAGAGTTTTAATG 361 GATCTCCAGAATCAGAAAAAAGATTGAAAAAAAAAAAAA	1360 GAICTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAACAAAAACAGAAGAA 1419 421 ACAAGGAAAAGGGAAGAGCCTCTTGGACTGATCTTGAAGACCTAAAACGCCAAGTA 480 1420 ACAAGGAAAATGGAGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA 1479 481 CAACAACATAAGGTGCTTCAAGAAGACTGAACAAGAACAAGTCTTC 540 1480 CAACAACATAAGGTGCTTCAAGAAGAACAAGAACAAGGGCTCAATTCTCTC 540 1480 CAACAACATAAGGTGCTTCAAGAAGAACAAGAACAAGGGCTCAATTCTCTC 540 1480 CAACAACATAAAGTGCTTCAAGAAAGAACAAGAACAAAGACAACAATTCTTC 540	541 ACTOROATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG	661 TGGGTTCTTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT 720	1678
NNNNNNG	, ≯ ĕ	2 2 2 4	6 7 6 7 7	3 7 8 7	8 7 8 7 5	2 22 42 42	¥	* * * * *

) and Becker muscular sequence is human	q	
and R24, hinge H4 nino acids)	Qy	961 CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC 1020
	ζ, Q	1021 AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC 1080
	cy Op	1081 CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT 1140
AAACGAGATTTCTAAT 120	çy Qa	1141 CICAACATTAGGICCCATTIGGAAGCCAGITCTGACCAGTGGAAGCGICTGCACCITICT 1200
	çy Q	1201 CTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
	y du	1261 ATTGGAGGGGACTTTCCAGCAGTTCAGAAGCAGAGGATGTACATAGGGCCTTCAAGAGG 1320 2119 ATTGGAGGGGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG 2178
AAGCTGATTGGAACAGGA 1239 AATCTCCTBAATTCAAGA 300 	& q	1321 GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG 1380 2179 GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTTTGAGACTGTACGAATATTTCTG 2238
	6 G	1381 ACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT 1440 2239 ACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT 2298
	& e3	1441 GAGGAGAGAGAGATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 1500 2299 GAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 2358
KCAAAACAGAAGA 1419 SACCTAAAACGCCAAGTA 480	\$ 65 62	1501 GAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTT 1560
	\$ g	1561 GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT 1620 2419 GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT 2478
	& <u>8</u>	1621 GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT 1680 2479 GAGGTGATCAAGGGATCCTGGCAGCCGTGGGGCGATCTCCTCATTGACTCTCCAAGAT 2538
SCAACTGCTGCTTTGGAA 1599 KGATGGACAGAAGACCGC 660	ò a	1681 CACCTGGAGAAAGTCAAGGCACTTCGAGGAAAATTGCGCCTCTGAAAGAGAAAACGTGAGC 1740
AGATGGACAGAAGACCGC 1659 ACCACTATTGGAGCCTCT 720	λ _ο q _α	1741 CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC 1800 2599 CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC 2658
AAGGAAACTGCCATCTCC 780	ζλ Op	1801 CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCGGTGGAGGAC 1860
	& 8	1861 CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT 1920 2719 CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT 2778
	\$ 65 6	1921 TCCACGTCTGTCCAGGGTCCCTGGGAGAGACGTTCTCGCCAAAAAGTGCCCTACTAT 1980
GCTGAAACAACTGCCAAT 1758 CCCAAGGGAGTAAAAGAG 960	۸۵	1981 ATCAACCACGAGACTCAAACA 2001

us-09-845-416-6_copy_1000_3000.rng

Ω

2116

420

360

2056

2296

540

480

2356

600

2416

720

999

2434

2434

840

2515

900

1020 2635 1080 2692 1140 2755 1200 2815 1260 2875

2575

```
1937 GCCCATCAGGGCCGGGTTAGTATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 1996
                                                                                                                                                                                                                                                                                                                 2117 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA 2176
                                                                                                                                                                                                                                                                                                                                                                                             2177 ACAAGGAAAATGGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA 2236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 CCTACTCAGACTGTTACTCTGGTGACACACCTGTGGTTACTAAGGAAACTGCCATCTCC 780
                                                                                                                                   1997 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                        TGGGAATGCCTCAGGGTAGCTTGGAAAAAAAAAGCAATTTACATAGAGTTTTAATG
  GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2237 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2297 ACTCACALGGIGGIGGIAGTIGALGAACCIAGAGAGAGACACGCAACIGCIGCTITGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2357 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGTTCTTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781 AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCGAAGAGAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----ACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2456 Treceecergaacergaaaagrirerrecergeerracagaagergaacaacreecaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACAGATGTTTATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2836 AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2696 CTGTTÄCAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2816 crecadedacricregreregeracaecreaaaaarearearraareeceecaecaecer
                                                                                         aaattatcagaagatgaagaaactgaagtacaagagcagatgaatctcctaaattcaaga
                                                                                                                                                                                                                                                                        361 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAGA
                                                                                                                                                                                                                                                                                                                                                                ACAAGGAAAATGGAAGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2417 regerrerriracaagac----
                                                                                                                                                                                 301
                                                                                                                                                                                                                            2057
                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1141
  181
                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                 ઇ
                                                                                                                                                                                                                                                                                                                                                                                                    8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            àg
                               g
                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1877 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGAGGTTTGACA 1936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels 141;
                                                                                                                                                                                                                                                                                            Human, dystrophin minigene, muscular, gene therapy, utrophin, s
adeno-associated virus, AAV, Duchenne muscular dystrophy, DMD,
Becker muscular dystrophy, ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 4825 BP; 1369 A; 1175 C; 1204 G; 1077 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6; Length 4825;
                                                                                                                                                                                                                                                  Adeno-associated virus vector plasmid, AAV-MCK-delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 85.4%; Score 1709; Best Local Similarity 93.0%; Pred. No. 0; Matches 1860; Conservative 0; Mismatche
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 1; Page 61-62; 71pp; English.
2839 ATCAACCACGAGACTCAAACA 2859
                                                                                                               BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-APR-2001; 2001WO-US013677
                                                                                                             AAD37257 standard; DNA; 4825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-APR-2000; 2000US-020077P
                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                    21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-NOV-2001
                                                                                                                                                        AAD37257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Xiao X;
```

ω

```
New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) element. The dystrophin minigene operably linked to an expression control element, in a recombinant adeno-associated with an expression useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a cytomegalovirus (CMV) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1780 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1840 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              reseaariscercasserascrassearssaaaaaaaaaarirracarasaasrrrraars
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAGGAAAATGGAAGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACAACATAAGGIGCITCAAGAAGAICTAGAACAAGAACAAGICAGGGICAATICTCIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ICTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGTGGAAGTGGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4848 BP; 1405 A; 1144 C; 1180 G; 1119 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 85.4%; Score 1709; DB 6; Best Local Similarity 93.0%; Pred. No. 0; Matches 1860; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 1; Page 68-70; 71pp; English.
                                                       27-APR-2001; 2001WO-US013677.
                                                                                                             28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTATTATCGTGGCTTCTTT
                                                                                                                                                                                                                                                                   WPI; 2002-049342/06
                                                                                                                                                               (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2260
                                                                                                                                                                                                                 Xiao X;
     ZX#X#X#X#X#X#####X#X####
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                    3175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1920
2876 ATTGGAGGGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG 2935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                                                                        2936 GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG
                                                                                                                                                                                                                       2996 ACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTC
                                                                                                                                                                                                                                                                                                                                       3056 GAGGAGAGACCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 3176 GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caccricaaaaarcaaaacacrircaacaaaaarraceccrcrcaaaaaaaaacaraaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3416 CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                              1321 GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG
                                                                                                                                                                                  1381 ACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT
                                                                                                                                                                                                                                                                                          GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                                                                                                               1501 GAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3476 dadroadgoadcracardaadcocacadagacrrrrgercoagcarcrrrcrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGAGCCCCTACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1981 ATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3596 ATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD37263 standard; DNA; 4848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytomegalovirus
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                    3116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3296
                                                                                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD37263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37263
CO AAD372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                           유
                                                                                                                           a
                                                                                                                                                                                à
                                                                                                                                                                                                                          용
                                                                                                                                                                                                                                                                                    \stackrel{\triangleright}{\alpha}
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ત્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ď
                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ል
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ત્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

1839

Indels 141; Length 4848;

. 0

1899

120

1959

180

2019

240

2079

300

2139

420

360

2199

480

2259

2319

09 1621 GAGGTGATCAAGGGATCCTGGCGGCGCATCTCCTCATGACTCTCTCCCAAGAT 1680 Db 3259 GAGGTGATCAAGGGATCCTGGCGCGCGATCTCCTCATTGACTCTTCTCCCAAGAT 3318 Oy 1681 CACCTCGACAAAGTCCAGGCACTTCGAGGCAATTCCTCTCTCAAAGACATGGC 1740 Db 3319 CACCTCGAGAAAGTCAAGGCACTTCGAGGAAATTGCGCCTCTCAAAGACACGTGAGC 1378 Oy 1741 CACGTCAATGACCTTGCTCGCCACTTACCACTTTGGGCATTCAAGACAAGACACGTGAGC 1378 Oy 1801 CACGTCAATGACCTTGCTCGCCACTTACCACTTTGGGCATTCAGCTCTCACGGTAAAC 1860 Db 3379 CACGTCAATGACCTTGCTCGCAGGACTTACCACTTTGGGCATTCAGCTCTCACGGTAAAC 1860 Oy 1801 CACGCACTCGGAAGACCTGAACACCACATTGGGCATTCAGCTCTCACGGTAAAC 1860 Db 3439 CTCAGCACTCGGAAGACCTGAACACCACATTGGGCATCTCAGCACTTTTTT 1920 Oy 1801 CCACGACTCGGAAGACCCACAGGACATTGGTCCAGCATTTCTT 1920 Db 3439 CACGTCAAGACCTGAACACCCACAAGAACAACAACAACAACAACAACAACAAC	AMD37264 AMD37264 AMD37264 AMD37264 XX AMD37264; XX AMD37264; XX AMD37264; XX AMD37264; XX When a gest contact d virus (AMV) vector plasmid, AAV-E-CWV-3849. XX XX Adeno-associated virus; AAV; Duchenne muscular dystrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; ds. XX XX XX XX XX XX XX XX XX	
ACTCACATGGTGGTAGTTGATGAATCTAGTGGACATCACGCAACTGCTGCTTTGGAA 600	CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC CTGATGAAACAATGGCAAGAACTCCTGAGATTCCTGGAAGGTTCCGATGATTATCAC AACCTGGATGAAAACGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATTATCAC AACCTGGATGAAAACGCCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGGAAAAAGTCT CTGTTACAAAGACGTTTGGATAACATGAACTTCCAAGTGGAGTGTTCGGAAAAAGTCT CTGTTACAAAATTAGGATAACATGAACTTCTAAGTGGAGTGACTTCGGAAAAAGTCT CTGTTACAAAATTAGGATAACATGAACTTCTAAGTGGAGTGATCTGGAAAAAGTCT CTGTTACAAGATTAGGATAACATGAACTTCTAAGTGGAAGTGTTCTGGAAAAAGTCT CTGTTACAAGATTAGGATAACATGAACTTCTAAGTGGAAGTGTTCTGGAAAAAGTCT CTGAAGATTAGGATCACATTCAGAACCTGAAACTTGAAGAAGTGATAAAGCGGAAGAACTTTCT CTGAAGATTAGGAACTTCTGGGAAGCCAGTTCTGAACATTAAGCGGCAGGCA	

invention also relates to a recombinant adeno-associated virus (AAV), comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) enhancer, a cytomegalovirus (CWV) promoter and a small polyA signal sequence

Sequence 5060 BP; 1449 A; 1217 C; 1234 G; 1160 T; 0 U; 0 Other;

g

셤

8 8 8

6 6 6 6 6 6 6 6

ਨੇ

à

941 TICCCCCTGGACCTGGAAAAGTTICTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT 900 Gaps 1992 GGCAGTTCATTGATGGAGAGTGAAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGA GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAGACCC TGGGTTCTTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTC AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACA GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAG GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTA 2052 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTA 181 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAAACAGG 2172 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGC 241 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATTCCTAAATTCAA(2232 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGGCAGATGAATCTCCTAAATTCAA 361 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAACAGAAGAAAA 2352 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAA **ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAG**; 2412 ACAAGGAAAATGGAGGAAGAACCTCTTGAACCTGATCTTGAAGACCTAAAACGCCAAG CAACAACATAAGGTGCTTCAAGAACAACAAGAACAAGAACAAGTCAGGGTCAATTCTC ACTICACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGG 2532 acticacatigerigeragitaritaridaticragitegagaricacecaactigeritige GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCC 721 CCTACTCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCT(CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTC GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGA 2112 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGA TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAA 2292 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAA 0; Indels 141; 6; Length 5060; DB Query Match

85.4%; Score 1709; D

Best Local Similarity 93.0%; Pred. No. 0;

Matches 1860; Conservative 0; Mismatches 301 2472 541 2592 199 2652 781 н 121 421 481 601 2670 61

셤

d

8 8 8 8

à

g

ద

ò

// htrol	qu	2691 TICCCCTGGACTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAT 2750
irus is	ò	901 GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAG 960
	qq	2751 GTCCTACAGGATGCTACCCGTAAGGATCTCCTAGAGACTCCCAAGGGAGTAAAAAG 2810
or pu	\$ 8	961 CTGATGAAAGAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACAGAGTGTTTATCAC 1020
	ଧ ପ	1021 AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC 1080
s 1; sa 60 	oy Op	1081 CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT 1140 2931 CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT 2990
	o od	1141 CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT 1200 2991 CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGAAAGCGTCTGCACCTTTCT 3050
	yy Db	CTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
	Qy Db	1261 ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG 1320
	Qy Db	
	y d	1381 ACAGAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGAG
	o da	1441 GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 1500 1291 GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 3350
	& g	1501 GAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCTT 1560
	ò 8	1561 GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT 1620
	ò a	1621 GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT 1680 1471 GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGGATCTCCTCCATTGACTCTCTCCAAGAT 3530
	\$ A	1681 CACCTGGAGAAAGTCAAGGCACTTCGAGGAGAAATTGGGCCTCTGAAAGAGAAGAGGACGTGAGC 1740
	oy Op	
2669 rcc 780	yo qu	1801 CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC 1860
2669 2AG 840	δγ Op	
2AG 2690 AAT 900	ò	1921 TCCACGTCTGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAA

õ ≥.

1179

1239

1299

360

1359

420

1419

1479

480

1539

600

540

1599

1659

708

099

1779

759

1959

813

2019

2079

957

897

1017

```
1660 recentrinizadadacarcentercaangecaacerentacigaadaacadecen 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .780 AAAGATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTA 1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1840 GAAAAGAAAAGCAATCCATGGGCAAACTGTATTCACTĆAAAĆAAĠĄTCŤTŤĆTTŤČAAĆA 1899
   AAATTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGACAAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1600 GAACAACTTAAGGTATTGGGAGGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCCC
                                                                                                              GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                             1180 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                   AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                        TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1360 GATOTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1540 ACTCACATGGTGGTGGTAGTTGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        709 ATTGGAGCCTCTCCTACTCAGACTGTTACTCTGGTGACACA-----ACCTGTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1960 TGGGATAATTTAGTCCAAAAACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2020 CAGTICCCCCTGGAACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2140 GAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGAGGTGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1018 CACAACCTGGATGAAAACAGCCAAAAAATCCTGAGAATCCCTGGAAGGTTCCGATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --CTAGCTCCTGGACTGACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1720 Titagrecarectricagaaaaaaaaagarecagreaacaagarreacacaacigecrit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAACTAGAAATGCCATCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ------GTACTCATAGATTACTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             898 AATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2080 AATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1900 criciacianta a de contra de con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        838 CAGTICCCCCTGGACCTGGAAAGTITCTTGCCTGGCTTACAGAAGCTGAAACAACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGGTTCTTTTACAAGACCAGCCTGAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 760 ACTAAGGAAACTGCCATCTC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           802 TTGATGTTGGAG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1420
                                                                                                              181
                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                  1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   814
                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         958
                                                                                        ò
                                                                                                                                                                      d
                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 9 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹ 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1119
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or turophin genes. HI and H4 invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operable linkage with an expression element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy minigene delta413 contraining nucleotides 1-1922 (N-terminus, hinge H1 and rods R1, R2 and R3), 8059-1027 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1000 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human, dystrophin minigene; muscular, gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACGAGGAGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
83.1%; Score 1662.8; DB 6; Length 4182;
Best Local Similarity 88.3%; Pred. No. 0;
Matches 1929; Conservative 0; Mismatches 72; Indels 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72; Indels 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4182 BP; 1309 A; 927 C; 970 G; 976 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 43-44; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human dystrophin minigene delta4173
                                                                      ATCAACCACGAGACTCAAACA 2001
                                                                                                                      BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                  AAD37230 standard; DNA; 4182
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08-NOV-2001
                                                                      1981
                                                                                                                                        3831
                                                                                                                                                                                                                                                                                                                                                                                    AAD37230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xiao X;
```

spectrin; BMD;

2001WO-US013677.

(first entry)

g à g ਨ੍ਹੇ q à 6 ਨੇ g 8 셤 ਨੇ 8 à g ጵ g

g ਨੇ

```
New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                 Human, dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                 Adeno-associated virus vector plasmid, AAV-MCK-delta4173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 57-59; 71pp; English.
                                                                                                                                                                                                                                                                                                                  28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-049342/06.
                                                                                                                                                                                                            WO200183695-A2
                                                                                                                                                                                                                                                                                  27-APR-2001;
                                                                                                                                                                                                                                                                                                                                                     (XIAO/) XIAO
                                                                                                                                          Homo sapiens
Unidentified
 21-AUG-2002
                                                                                                                                                                                                                                              08-NOV-2001
                                                                                                                                                                            Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                       Xiao X;
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                     1197
                                                                                                                                                                                                          2439
                                                                                                                                                                                                                                                1317
                                                                                                                                                                                                                                                                                  2499
                                                                                                                                                                                                                                                                                                                  1377
                                                                                                                                                                                                                                                                                                                                                                                         1437
                                                                                                                                                                                                                                                                                                                                                                                                                         2619
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2980 AACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAG 3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1678 GATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTG 1737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1738 AGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTAT 1797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITICCACGICIGICCAGGGICCCIGGAGAGAGACCAICICGCCAAACAAGAGGCCCIAC 1977
2200 CACAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCA
                                                          2320 TCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCTT
                                                                                                                                                                                                                                              CCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAG
                                                                                                                                                                                                                                                                          2440 CCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAG
                                                                                                                                                                                                                                                                                                                  1318 AGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2620 CCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1498 ACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2680 ACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCTTTGACTCTCTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2860 GATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2920 AGCCACGICAAIGACCIIGCICGCCAGCIIACCACIIIGGGCAIICAGCICICACGIAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1798 AACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCGTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1858 GACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3040 GACCGAGTCAGGCAGCTGCATGAAGCCCACACAGGGACTTTGGTCCAGCATCTCAGCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3100 CTITCCACGECTGECCAGGGTCCCTGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTAC
                                                                                                     TCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTT
                                                                                                                                                                          2500 AGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTT
                                                                                                                                                                                                                                                                                                                                                                                                                         2560 cricacadadecadecririogradadatriciracidadeadececadadadecrideer
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGAGGAGAGAGCCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2740 cricaaadacrecaddaacricaagagccacdgargargacricaagcrecaa
                                                                                                                                                                                                                                                                                                                                                                                       CTGACAGACAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATATCAACCACGAGACTCAAACA 3183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1918 (
                                                                   2260
                                                                                                     1138
                                                                                                                                                                          1198
                                                                                                                                                                                                                                              1258
                                                                                                                                                                                                                                                                                                                                                                                       1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3160
                                 1078
```

g

ጽ

ď

à

g

ä

ရှ

ጵ

ጵ

6

g

ਨੇ q

à

```
1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2056
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchanne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAAGCAATTTACATAGAGTTTTAATG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1997 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1757 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1817 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGGACAAGGAGAGACATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gecearcaggecegegriegraanarrenacaarreggaagraagerearregaacagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGGACAAGGAGAGTTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTGGAAGTGGTGAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             11arity 88.3%; Pred, No. 0; DB 6; Length 5149; Conservative 0; Mismatches 72; Indels 183:
                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5149 BP; 1489 A; 1236 C; 1269 G; 1155 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Simi
Matches 1929;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
```

AAD37255 standard; DNA; 5149

AAD37255

RESULT 9
AAD37255
ID AAD37
KX
AC AAD37
KX

Mon Apr 5 15:45:55 2004

1317 TCTTGCAGGAACTTCTGCAGCAGTTCAGAACGAGAACGAAC	RESULT 10 ABK81999 standard; DNA; 5462 BP. XX XX AC ABK81999; XX DT 13-AUG-2002 (first entry) XX DY Nini-dystrophin protein deltaR2-R21+H3. XX XX DE DNA encoding mini-dystrophin protein deltaR2-R21+H3. XX X
	958 GAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTAT 1017 2897 GAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTCAAGCTCACACAGATGTTTAT 2956 1018 CACACCTGGAAACAATGGCAAAAATCCTGAGAATTCAAGATCCACACAGATGTTTAT 2956 1018 CACACCTGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

```
1770
                                                                                                                                                                                                                                                  2317
                                                                                                                                                                                                                                                                                                                                  2377
                                                                                                                                                                                                                                                                                                                                                                            1590
                                                                                                                                                                                                                                                                                                                                                                                                                    2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGGA 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
fragment
                                                                                                                                                  AGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGG
                                                                               CAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATG
                                                                                                                          AGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                         GACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGAGCTGGACCTCAAGCTGCGCCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACC
2078 AAAGATGATGAATTAAGCCGGCAGGAACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAG
                                                                                                                                                                                                          CTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTT
                                                                                                                                                                                                                                       CTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTT
                                                                                                                                                                                                                                                                                                                                  craceaaaecaeecreaeeacacacaaracreaereeeaaaaaarreaaccrececre
                                                                                                                                                                                                                                                                                                                                                                            GACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTITIGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACTTTGGTCCAGCATCTCAGCACTTTCCACGCTCTGTCCAGGGTCCCTGGGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACTITGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGA
                                                                                                                                                                                                                                                                                            CTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCGATCTCCTCATTGACTCTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; dystrophin; extein; intein; trans-splicing; gene therapy;
Duchenne muscular dystrophy; Becker muscular dystrophy; DMD; BMD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= a //label= S4 junction site //label= S4 junction gene is split at this site /note= "Dystrophin gene is split at this site attached to an intein sequence. The resulting used to produce plasmid pSD4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
2847. .2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human dystrophin gene (Becker form)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD06794 standard; DNA; 5952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Key
misc_recomb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-AUG-2001
                                                                               2138
                                                                                                                                                                                                                                                                                                                                  2318
                                                                                                                                                                                                                                                                                                                                                                                                                    2378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1951
                                                                                                                          1351
                                                                                                                                                                  2198
                                                                                                                                                                                                          1411
                                                                                                                                                                                                                                                  2258
                                                                                                                                                                                                                                                                                          1471
                                                                                                                                                                                                                                                                                                                                                                            1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD06794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           디
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AADO6794

IID AADO

AAC AADO

XXX XXX AADO

XXX ABD BE Hume

XXX Hume

XXX Hume

XXX Hume

XXX Home

XXX Home

XXX FFT missey

FFT missey
                                                                  d
                                                                                                                     8
                                                                                                                                                         g
                                                                                                                                                                                                     \delta
                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                          ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAGATGATGAATTAAGCCGGCAGGACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAG 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCTGGTGACACAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         990
                                                                                                                                                                                                                                                                                                                                                                     The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a mucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polymucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                               A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCTGGTGACACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ccididentaciaadeaaacidecarciccaaaciadaaaidecarciicardiid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAAACAATGGCAAGACCTCCAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAATTGAAGCTCACACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGACCAGTGGGAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTGTGGTTACTAAGGAAACTGCCATCTCCAAACTAGAAATGCCATCTTCCTTGATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5462 BP; 1668 A; 1225 C; 1212 G; 1357 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ٠<u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1283; DB 6; Length 5462;
Pred. No. 0;
0; Mismatches 0; Indels 9
                                                                                                                                                                                                                                                                                                                               Disclosure; Fig 14; 145pp; English
                                     04-OCT-2001; 2001WO-US031126
                                                                               06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 99.3%;
Matches 1302; Conservative
                                                                                                                                                           Chamberlain JS, Harper
                                                                                                                     (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                       WPI; 2002-435334/46.
11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for treatm
(DMD). Thi
invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         991
```

셤

8 8 8

6 6 6

음

ò

셤

8 8 8

```
993
                                                                                   3126
                                                                                                                   1053
                                                                                                                                                  3186
                                                                                                                                                                                  1113
                                                                                                                                                                                                                  3246
                                                                                                                                                                                                                                                  1173
                                                                                                                                                                                                                                                                                                                                                   3366
                                                                                                                                                                                                                                                                                                                                                                                     1293
                                                                                                                                                                                                                                                                                                                                                                                                                   3426
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4086
                                                                                                                                                                                                                                                                                    3306
                                                                                                                                                                                                                                                                                                                     1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12
                                                                                                                                                 셤
                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                              원
                                                 ò
                                                                          ద
                                                                                                             ઠે
                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a method directed to the use of spontaneous or automatic protein trans-splicing to join two or more peptides at junction site. This method involves expressing extein peptides having co-reacting portions of split intean attached to them, so that peptides will splice automatically under suitable conditions. The invention also provides methods for circumventing virion packaging size influtations in recombinant virus particle, by splitting a coding region for a protein to be delivered into two or more extein genes, which are packaged in separate virus particles and are co-delivered in a target cell for the expression and for subsequent trans-splicing to form the complete protein. In particular, the method is used for trans-splicing human dystrophin and in gene therapies of recombinant adeno-associated virus (AAA) particles that encode trans-spliced dystrophin, for treating diseases such as Duchenne muscular dystrophin, for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           932
                                                                 18
                                                                                                                                                                  <u>1</u>.8
                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                                                                                                                  and
fragment :
                                                                                                                                                                                                                                                  and
fragment
                                                                   fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BMD). The present sequence is human dystrophin gene (Becker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAAGAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3006 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Use of spontaneous or automatic protein splicing to join two or more peptides at junction site involves expressing extein peptides having reacting portions of split intein attached to them, so that peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5952 BP; 1860 A; 1344 C; 1410 G; 1338 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 5952;
                              /label= S3_junction_site
/note= "Dystrophin gene is split at this site
attached to an intein sequence. The resulting
used to produce plasmid pSD3"
                                                                                                                             /label= S2_junction_site
/note= "Dystrophin gene is split at this site
attached to an intein sequence. The resulting
used to produce plasmid pSD2"
                                                                                                                                                                                                                               /label= Sl_junction_site
/note= bystrophin gene is split at this site
attached to an intein sequence. The resulting
used to produce plasmid pSDl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match

59.1%; Score 1182.6;
Best Local Similarity 99.7%; Pred. No. 0;
Matches 1185; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Fig 2; 81pp; English.
                                                                                                                                                                                                                                                                                                                                                                                   2000WO-CA001216.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNIV DALHOUSIE.
UNIV PITTSBURGH
                                                                                                                   *tag=
                                                                                                                                                                                                                  *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-367297/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Paul XL, Xiao X;
                                                                                                                                                                                                                                                                                                                  WO200129243-A1
                                                                                                                                                                                                                                                                                                                                                                                   13-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                   15-OCT-1999;
misc_recomb
                                                                                                 misc_recomb
                                                                                                                                                                                                  misc_recomb
                                                                                                                                                                                                                                                                                                                                                   26-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dystrophy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            933 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (UYDA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2946
```

```
1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITIGGICCAGCAICTCAGCACTITCTITCCAGGICTGICCAGGGICCCTGGGAGAGAGC
CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                     AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG
                                                                                                                                      AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                             ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                             CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAACTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rdaccadriggaadcorcriscaccrirrcrordcaddaacrircroscrordcoracadcridaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACTCTTGAGACTGTACGAATATTTCTGACAGCAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               readcriggaccricaagcrigcoccaagcrigaggrigarcaagggarccriggcagcccgrigge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cgarcrecrearreacrereceaagareaceregagaagaereaaggeacreeaggaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGAGCTGAACACCAGATG
                                                                                                                                                                                                               atccctggaaggttccgatgatgcagtcctgttacaaagacgtttggataacatgaactt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATGATGAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACCAGGAGCCCAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 4134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
```

```
1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                         <u>CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC</u>
                                                                                                            AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGGÁGTTCAGAAGCA
                                                                                                                                                                               GAACGAIGIACAIAGGGCCIICAAGAGGGAAIIIGAAAACIAAAGAACCIGIAAICAIGAG
                                                                                                                                                                                                                                                                                   GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                             TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                      TACTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crescagadadadadadadacccrrgadadacrecagedacrecagedacrecaged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      readcriedactricadecreceaactreaderearcaadedarccreecadecerede
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cearcrectratreacrecterandareacrecandanacrenageacrecandens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACACAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3952 triregecafricaecrereaccerataacereacereregaagaecreaacaecaeare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cririderecaddarcreaddacrirircriricaddicionaddacreaddacadaagac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTTGGTCCAGCATCTCAGCACTTTCTATCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
4180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human dystrophin protein coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3292
                                                                     1173
                                                                                                            3352
                                                                                                                                                        1233
                                                                                                                                                                                                  3412
                                                                                                                                                                                                                                            1293
                                                                                                                                                                                                                                                                                     3472
                                                                                                                                                                                                                                                                                                                               1353
                                                                                                                                                                                                                                                                                                                                                                         3532
                                                                                                                                                                                                                                                                                                                                                                                                                    1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                     ò
                                                                                                   ద
                                                                                                                                                      ò
                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGAACGTGGAAAAGTTTCTTGCCTG 3051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT 3111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccragaagacrccaaggagraaaagagcrgargaagaagaagaggaggaggrga 3171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3232 Arccordeaagarrecaargargcagrecrgrracaaagacgrragaraagacar 3291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polymucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, or a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                  Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seguence 8689 BP; 2721 A; 1804 C; 1861 G; 2303 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 59.1%; Score 1182.6; DB 6; Length 8689; Best Local Similarity 99.7%; Pred. No. 0; Matches 1185; Conservative 0; Mismatches 4; Indels 0;
                                                                                                                                                      mini-dystrophin protein deltaH2-R19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 15; 145pp; English.
                           BP
                           DNA; 8689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                    04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŝ
                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-435334/46.
                         standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chamberlain JS,
                                                                                                                                                                                                                                                                                                                               WO200229056-A2
                                                                                                                                                                                                                                                                Homo sapiens.
Synthetic.
                                                                                                                                                        encoding
                                                                                                               13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1113
                         ABK82000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              666
                                                                   ABK82000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (DMD)
                                                                                                                                                        DNA
```

P

6 6 6 6 6

d

δ

g

ò

1472

8651

8711

1532

8771 1592 8831 1652

8891

1712

8951

1772

9011

1832

9071

```
CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 1952
GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                     TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTGCGCCTCTGAAAGAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATTGGGCCTCTGAAAGAGAAAGGGGGGGGGCGAATGACCTTGCTCGCCGGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rrresecarricascricreseceraraacereascaereresaasaecreasars
                              GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                           TACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                  CTACCAGGAGCCCAGAGGCTGCCTCCTGAGGAGAGGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                             ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                             <u>accadadecaecercaegeaegrecataerecegeaaaarreaacerecaerecegerea</u>
                                                                                                                                                                                                                                                                                                    CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                        crescagadadadargargacccrrcadadgacrccaggadcrrcadgaggccagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGATCTCCTCATTGACTCTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  crrrderccaecarcrescaerricrirecaegrerercraegereeregagagaege
                                                                           <u>TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; human; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCICGCCAAACAAGIGCCCTACIATAICAACCACGAGACICAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA encoding human dystrophin, full length HDMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard; DNA; 11241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200229056-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-APR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9132
                                    8532
                                                                           1353
                                                                                                             8592
                                                                                                                                                  1413
                                                                                                                                                                                      8652
                                                                                                                                                                                                                             1473
                                                                                                                                                                                                                                                               8712
                                                                                                                                                                                                                                                                                                      1533
                                                                                                                                                                                                                                                                                                                                        8772
                                                                                                                                                                                                                                                                                                                                                                               1593
                                                                                                                                                                                                                                                                                                                                                                                                                     8832
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABK82005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABK82005
  1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABK82005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                 9
9
9
9
                                                                                                                                                                                                                g &
                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
  8 6
                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATGATGAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention relates to an isolated nucleotide sequence encoding a dystrophin minique. The minique comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minique operably linked to an expression control element. The dystrophin minique in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin protein coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                 New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTGAAGCTCACACACATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGTACAACTACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8052 GGAAGAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccragaagacrccaagggagraaaagagcrgargaaaacaarggcaagaccrccaaggrga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arcecregaagerrecgargargagerecrerracaaagacerregaraacargaacrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATGATGATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 11058 BP; 3686 A; 2292 C; 2621 G; 2459 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 11058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59.1%; Score 1182.6; 99.7%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 40-43; 71pp; English
                                                                                                                                                  2000US-0200777P
                                                                                                               2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best_Local Similarity >>..
Matches 1185; Conservative
                                                                                                                                                                                                                                                                 WPI; 2002-049342/06.
                                    WO200183695-A2
                                                                                                             27-APR-2001;
  Homo sapiens
                                                                                                                                                  28-APR-2000;
                                                                                                                                                                                      (XIAO/) XIAO
                                                                         08-NOV-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                             Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
```

9099

```
8920 ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGA
                                                                                                                               CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGCACGGA
                                                                                                                                                                                 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                         9040 TGAGCTGGACCTCAAGCTGCGCCAAGCTGATGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                 CGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                      cearcrectrarreacreterecaseareaceresasaaagreaageacrecaagaaga
                                                                                                                                                                                                                                                                                                                                                AATTGCGCCTCTGAAAGAAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                              AATTGGGCCTCTGAAAGAGAACGTGAACGTCAATGACTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                               TITGGGCATICAGCICICACCGTATAACCICAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9220 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCCTGAACACCCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9280 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTTGGTCCAGCATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9400 CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1953 CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding mini-dystrophin protein deltaR9-R16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure, Fig 17; 145pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABK82002 standard; DNA; 11443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-2001; 2001WO-US031126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chamberlain JS, Harper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2002-435334/46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200229056-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           варіепв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                   1473
                                                                                                  1533
                                                                                                                                            8980
                                                                                                                                                                                 1593
                                                                                                                                                                                                                                                                                                          9100
                                                                                                                                                                                                                                                                                                                                                  1713
                                                                                                                                                                                                                                                                                                                                                                                         9160
                                                                                                                                                                                                                                                                                                                                                                                                                                 1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1893
                                                                                                                                                                                                                                                                     1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABK82002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABK82002
                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                        셤
                                                                                                                                                                               à
                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                  ò
                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GEAAGAAACICATAGATTACTGCAACAGTTCCCCCTGGAACAAAAGTTTCTTGCCTG 8319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1053 ATCCCTGGAAGGTTCCGATGAAGGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         932
                                                                                                                                                                                                                                        The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats domains to more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscale disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a human dystrophin polynucleotide sequence used in the creation of the mini-dystrophin peptides of the
                                                                                                                    A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, or a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTGGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTACCAGGAGCCCAGAGAGCCTGCTCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAATCCTGAG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGATGATGAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8800 TACTCTTGAGACTGTACGAATATTTCTGACAGGGGGGCGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCGTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                arcccregaagerrecargarecaerecrerracaaagacerrecaraacargaacrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 11241 BP; 3738 A; 2325 C; 2656 G; 2522 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 6; Length 11241;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1182.6;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59.1%; Score ilarity 99.7%; Pred. Conservative 0; Mis
                                                                                                                                                                                                       Example 2; Fig 23; 145pp; English
                                         ŝ,
                                       Chamberlain JS, Harper
(UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 1185, Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
```

à

8 8 8 8 8

유

8 8 8 8

원 상 원

 δ

셤

ð

à

or

```
5805
                                                                                                                                                                                                                                                                                                                                                                                                                                5865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA 1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATGATGAATTAAGCCGCCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
                                                                                                                                                                                                                                                                                                                        872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    992
                                                                                                                                                                                                                                                                                                                                                                                              932
       peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, between a more than n spectrin-like repeats, where n is an even number between x a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                        813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                            5746 GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                5806 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arcccragaagerrccgargargcagrccrgrracaagacgrrrggaraacargaacrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                              GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACTCTTGAGACTGTACGAATATTTCTGACAGACGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGAAAGCAGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGCTGGACCTCAAGCTGCGCCAAGCTGAAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          reaccastegaascercrecaccrrrcrerecaseaacrreresreseracaserea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATGATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTACCAGGAGCCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                   Length 11443;
                                                                                                                                                                                                                 Sequence 11443 BP; 3707 A; 2339 C; 2502 G; 2895 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                     ó;
                                                                                                                                                                                                                                                                                     4; Indels
                                                                                                                                                                                                                                                   DB 6;
                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 99.7%; Pred. No. 0;
Matches 1185; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                              873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6526
***********
                                                                                                                                                                                                                                                                                                                        ጵ
                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                              ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ત્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ਲ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            й
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ≿
```

```
6825
                            6645
                                                      1772
                                                                                                                1832
                                                                                                                                             6765
                                                                                                                                                                                                                                     1952
                                                        AATTGCGCCTCTGAAAGAAACGGGGCACGTCAATGACCTTGCTCGCCAGCTTACCAC
               GATCTCCTCATGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                             rrresecarreagerereaceraracereageaereresaagaeereaaeae
                                                                                                                                                                                                                                   CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                              AATTGGGCCTCTGAAAAAAAAGAGCAGCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                TITGGGCATICAGCICICACCGTATAACCICAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                          GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                      GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                             CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                             CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                    Search completed: April 4, 2004, 18:19:39 Job time : 529.337 secs
                            6586
                                                                                                                                                                                                                                                                 . 9289
                                                                                                                                             9019
                                                      1713
                                                                                    6646
                                                                                                                                                                                                     9919
                                                                                                                                                                                                                                   1893
                                                                                                                                                                                                                                                                                                                         6886
 1653
                                                                                                                1773
                                                                                                                                                                           1833
                                                                                                                                                                                                                                                                                             1953
                    8 S
                                                                            g
                                                                                                               ઠે
                                                                                                                                      g
                                                                                                                                                                       ò
                                                                                                                                                                                               Ωp
                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                           ò
```

Mon Apr

no ur

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

April 4, 2004, 12:04:07; Search time 5216.76 Seconds (without alignments) 16625.161 Million cell updates/sec US-09-845-416-6_COPY_1000_3000 2001 1 ggcagttcattgatggagag......tcaaccacgagactcaaaca 2001 6940544 GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd. stal number of hits satisfying chosen parameters: 3470272 segs, 21671516995 residues ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries f nucleic - nucleic search, using sw model IDENTITY NUC Gapop 10.0 , Gapext 1.0 em_hrg_hum: *
em_hrg_inv: *
em_hrg_inv: *
em_hrg_pub: : *
em_hrg_pln: *
em_hrg_pln: *
em_hrg_mam: *
em_hrg_mam: *
em_hrg_wrt: * inimum DB seq length: 0 aximum DB seq length: 2000000000 gb ba.;
gb hrgg.;
gb om:;
gb om:;
gb ow:;
gb o em_sta:* em_un:* em or: *
em ov: * GenEmbl:* itle:
srfect score:
squence: soring table: tabase: sarched:

THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)

Db 2438 GATGAGCTCCAAGCTGCCAAGCTGATCAAGGGATCCTGGCGCCCGTG 2497 1651 GGCGATCTCCTCATTGACTCTCCCAAGATCAAGGGATCCTGGCAGCCCGTG 2497 2498 GGCGATCTCCTCATTGACTCTCTCCAAGATCAAGGGATCAAGGCACTTCCAAGA 1710 2498 GGCGATCTCCTCATTGACTCTCTCCAAGATCAAGGCACTTCCAAGGA 2557 1711 GAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTTGCTGCTGCACGTTACC 1770 2558 GAAATTGCGCCTCTGAAAGAAGACGTGAGCCACGTCAATGACCTTGCTGCAGCTTACC 2617 Cy 1771 ACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTTGCTGCAGCTTACC 2617 Cy 1771 ACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTTGCTCGCAGCTTACC 2617 Cy 1891 GACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCAGCTCAAGACCCAGAG 1890 bb 2678 TGGAAGCTTCTGCAGGTGGCCGTCAAGACCTCAGGAAGACCTGAAACCCAGG 1890 cy 1891 GACTTTGGTCCAGCTCTCAGCAGTCAGGCAGCTGCATGAAGCCCTGGGAAGA 2677 Cy 1891 GACTTTGGTCCAGCACTTCTTCCACGTCAGCAGCTCCAGGGAAGA 2797 1891 GACTTTGGTCCAAGAACTTCAGCACTTTCTTTCCACGTCATCAAGACCCTGGGAAGA 2797 Cy 1951 GCCATCTGCCAACAACAAGAACTTTCTTTCCACGTCATCAACA 2001 Db 2798 GCCATCTGGCCAACAAACAAAGTGCCCTACTATATCAACCACGAGGACCTGGGAAGA 2797 1951 GCCATCTGGCCAAACAAAGATGCCCTACTATATCAACCACGAGGTCCAGGGAAGA 2797 Db 2798 GCCATCTGGCCAAACAAAGATGCCCTACTATATCAACCACGAGGTCCAGGGAAGA 2848	REBUIL 2
EATURES Location/Qualifiers source Lorganism="synthetic construct" /mol_type="unassigned bna" /db_xref="taxon:32630" /noTe="synthetic" /db_xref="taxon:32630" /noTe="synthetic" /db_xref="taxon:32630" /noTe="synthetic" /noTe="	931 CTCCTAGAAGACTCCAAGGAGTAAAAGACCTGATGAAACAATGCCAAGCTCCAAGGT 1837 1778 CTCCTTAGAAGACTCCAAGGAGTAAAAGACCTGATGAAACAATGCCAAGACCTCCAAGGT 1837 1838 GAAATTGAAGTCCACACAAGTGTTTATCACAACTGGATGAAAACACCCAAAAAATTCTG 1897 1839 GAAATTGAAGTCCACACAAGTGTTTATCACAACTGGATGAAAACAGCCAAAAAATTCTG 1897 1839 GAAATTGAAGTCCACACAAGTGTTTATCACAACTGGATGAAAAAACTCTG 1897 1831 TTCAAGTCGTGAAACTTCGAAAAAACTCTTATCACAAAAAACTTTGGAAGCCAAAAAATTCTG 1897 1831 TTCAAGTCGAAGAACTTCGAAAAAACTCTCAACTTTAGAAACCACAAAAATTCGAACAAAATTCGAAACAATTAGAAACAAAAATTTGAAACAAAAAAAA

COMMONWEALTH

ന

```
2946 GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3006 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGCTAACGGAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3066 CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3186 AICCCIGGAAGGITCCGAIGAIGCAGICCIGITACAAAAGACGIIIGGAIAACAIGAACAIGAACTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1113 CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         873 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u> AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3246 caactecactecacaaaaactececeaacacatraceteceatracatecaatec
                                                                                                                                                                                                                                                                                                                                                                                    813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                             6; Length 5952;
Paul, X.L. and Xiao, X. Method and vector for producing and transferring trans peptides Patent: WO 0129243-A 1 26-APR-2001; DALHOUSIE UNIVESITY (CA); UNIV. OF PITTSBURGH OF THE SYSTEM OF HIGHER EDUCATION (US)
                                                                                                                                                                                                                                                                                                                                              4; Indels
                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 99.7%; Pred. No. 1.1e-285;
Matches 1185; Conservative 0; Mismatches 4;
                                                                                                                          1. :5952,
/organism="Homo sapiens"
/mol_type="unassigned DNA"
/db_xxef="teaxon:9606"
2897. :2898
/note="84 junction site"
7198. :3199
/note="82 junction site"
                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     993
                                                       JOURNAL
                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  상 염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
   1172
                                                                        1232
                                                                                                           3365
                                                                                                                                                1292
                                                                                                                                                                                3425
                                                                                                                                                                                                                     1352
                                                                                                                                                                                                                                                                                          1412
                                                                                                                                                                                                                                                                                                                            3545
                                                                                                                                                                                                                                                                                                                                                                 1472
                                                                                                                                                                                                                                                                                                                                                                                                  3605
                                                                                                                                                                                                                                                                                                                                                                                                                                      1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 3845
                                                                                                                                                                                                                                                         3485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTGCGCCTCTGAAAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITGGGCAITCAGCICTCACCGIAIAACCICAGCACICIGGAAGACCTGAAACACAGAIG 3965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTTGGTCCAGCATCTCACCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 4085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITITGGICCAGCAICTCAGCACITICITICCACGICTGCCAGGGICCCTGGGAGAGAGC 1952
                                                                     GAACGATGTACATAGGGCCTTCAAGAGGGGAATTGAAAAACTAAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGAAAGCAGGCTGAAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCCAGGAACTTCAAGAGGCCACGGA
 CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                        CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                            AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                   GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                        TACTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAAACT
                                                                                                                                                                                                                                                                                                                       TACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                    ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     readcreaaccreaaccrececcaagcreagcrearcaagearccreecaeccerees
                                                                                                                                            AGATGATTAAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                             CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCTTCTGCAGGTGGCCGTCGAGGCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGGCTCAAACA 4134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                  3246
                                                                       1173
                                                                                                       3306
                                                                                                                                            1233
                                                                                                                                                                              3366
                                                                                                                                                                                                                   1293
                                                                                                                                                                                                                                                     3426
                                                                                                                                                                                                                                                                                        1353
                                                                                                                                                                                                                                                                                                                           3486
                                                                                                                                                                                                                                                                                                                                                               1413
                                                                                                                                                                                                                                                                                                                                                                                                3546
                                                                                                                                                                                                                                                                                                                                                                                                                                    1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4086
```

3005

872

ö

Gaps

3065

932

1052

3125

892

1112 3245 1172

11-MAY-2001

PAT

linear

DNA

AX114289 5952 bp Sequence 1 from Patent WO0129243. AX114289

ESULT 3
X114289
OCUS
EFINITION
CCESSION
ERSION
EYWORDS
OURCE

AX114289.1 GI:14031259

Craniata; Vertebrata; Buteleostomi; Catarrhini; Hominidae; Homo.

Homo sapiens (human)
Homo sapiens
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;

ORGANISM

BFERENCE

	3472 GAACGATGTACGACCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGA 1353 TACTCTTGAGACTGTACGAATATTTCTGACAGAGCCTTTGGAAGGACCTGTAATCATGAG 1353 TACTCTTGAGACTGTACGAATATTTCTGACAGAGCCTTTGGAAGGACTGTAGAGAACT 1413 CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGGACCTTTGGAAGGACTTGGAAACT 1413 ACGAAAGCCCAGAGAGCTGCCTCCTGAGGAGGAGCCCAGAATGTCACTCGGCTTCT 15592 CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAAGGCCCAGAATGTCACTCGGCTTCT 1473 ACGAAAGCAGGAGCCCAGAGAGCTCCTCTGAGGAAAAATTGAACCTGGACTTCT 1473 ACGAAAAGCAGGAGGCCCATAATACTGAGTGGGAAAAATTGAACCTGGACTTCT 1473 ACGAAAAGCAGGAGGCCCATAATACTGAGTGGGAAAAATTGAACCTGCACTCGA	1533	Oy 1833 GAAGCTTCTGCAGGTGGCCGTCGAGGCCAGGCAGCAGGCAG	RESULT 5 AX38624 AX538624 LOGGERIATION Sequence 44 from Patent W00229656. ACCESSION AX538624 VERSION AX538624.1 GI:25271175 KEYWORDS SOURCE Synthetic construct ORGANISM Synthetic construct
2y 1593 TGAGCTGGACCTCAAGCTGGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 1652 bb 3726 TGAGCTGGACCTCAAGCTGCGCCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGG 3785 2y 1653 CGATCTCCTCATTGACTCTCTCCCAGAACACCTCGAGAAGTCAAGGCACTTCGAGGAGA 1712 bb 3786 CGATCTCCTCATTGACTCTCTCCAGAACACCTCGAGAAGTCAAGGCACTTCGAGGAGA 3845 2y 1713 AATTGCGCCTCTGAAGAACGAACGACCTCAGAAGAACCTTGCTCGCCAGCTTACCAC 3705 2y 1773 TTTGGGCCTTCTACCGTATAACCTCAGCACTCTGGAAGACCTGAACACACAGATG 3965 2b 3906 TTTGGGCATTCAGCTCTAACGTATAACCTCAGGAACTCTGGAACACCAGAATG 3965	1833 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892 1893 1894 1895 1895 1895 1896 1897	WESULT 4 WESULT 4 WESULT 4 WESULT 6 WESULT 1000CB DETUILIN Sequence 42 from Patent W00229056. WCCESSION AX538622 WEREUCE AX538622	Query Match	3112 CCTAGAAGACTCCAAGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 992 3112 CCTAGAAGACTCCAAGGGAGTAAAAGACTGATGAAACAATGGCAAGACTCCCAAGGTGA 3171 312 ATTGAAGTTCACACAGGTTATCACACCTGGATGAAAAACAGCCAAAAAATCCTGAG 1052 3172 AATTGAAGCTCACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG 1052 3172 AATTGAAGCTCACAGATGTTTATCACAACCTGGATGAAAAAACAGCCAAAAAATCCTGAG 3231 3172 AATTGAAGCTCCGATGATTATCACAACCTGGATGAAAAAACAGCCAAAAAATCTTAAGAAAATCTTAACAGATGAAGAAAAAATCTTAAGAAAAAAAA

15:45:54 2004

Ŋ

Mon Apr

```
1772
                                                                                                                                                                      1832
                                                                                                                                                                                                                                                                                     6825
                                        6586 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAATCAACGCACTTCGAGGAGA 6645
                                                                                                                                                                                                           6765
                                                                                                                                                                                                                                                                                                                         1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               992
                      CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                              <u>AATTGCGCCTCTGAAAGAGAGACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC</u>
                                                                                                                  AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCCTCGCCAGCTTACCAC
                                                                                                                                                                      TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCCTGAACACCCAGATG
                                                                                                                                                                                                         6706 TITGGGCATICAGCICICACCGTATAACCICAGCACTCIGGAAGACCIGAACACAGAIG
                                                                                                                                                                                                                                               GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                   6766 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGACTAGGCAGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                         CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCCCAGGGTCCCTGGGAAGAGAC
                                                                                                                                                                                                                                                                                                                                               6826 CTTTGGTCCAGCATCTCAGCACTTTCTTTCCAGTCTGTCCAGGGTCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8260 GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8320 GCTTACAGAAGCTGAAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                933 CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGAAGCTCACACAGATGTTATCACAACCTGGATGAAAACGCGAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCCTTGGAAGGTTCCGATGATGATGCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59.1%; Score 1182.6; DB 6; Length 12057; ilarity 99.7%; Pred. No. 1.2e-285; Conservative 0; Mismatches 4; Indels 0; (
                                                                                                                                                                                                                                                                                                                                                                                                                            6886 CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 6934
                                                                                                                                                                                                                                                                                                                                                                                                 CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chamberlain, J.S. and Harper, S.O.
Minn-dystrophin nucleic acid and peptide sequence. Wo 022905-A 47 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US
Location/Qualifiers
L. 1.2020.

organism="synthetic construct"
/mol_type="unassigned DNA"
/hote="synthetic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 47 from Patent WO0229056.
AX538627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AX538627.1 GI:25271181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           synthetic construct
synthetic construct
artificial sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Simi
Matches 1185;
                                                                                                                                6646
                                                                                          1713
                    1653
                                                                                                                                                                    1773
                                                                                                                                                                                                                                               1833
                                                                                                                                                                                                                                                                                                                     1893
                                                                                                                                                                                                                                                                                                                                                                                                 1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 6
AX538627
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN,
                                            ď
                                                                              ਨੇ
                                                                                                                        g
                                                                                                                                                                    8 6
                                                                                                                                                                                                                                             6 6 6
                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                               5805
                                                                                                                                                                                                                                                                                                                                                                                                                                                        5865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 6105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA 1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 6225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG 6285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6585
                                                                                                                                                                                                                                                                                                       ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACTGCACTCCGCTGA 6465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 1652
                                                                                                                                                                                                                                                                                                                                         872
                                                                                                                                                                                                                                                                                                                                                                                                                    932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              992
                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTAGAAGACTCCAAGGGGGGGTAAAAGGGCTGATGAAACAATGGCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGACCAGTGGAGGGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGCTACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCIAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAAAAAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGACTAGAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTACCAGGAGCCCAGAGAGCTGCCTCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                crescadadaaaaaradargaaccrrsaaadacrccaddaacrrcaadaggccacdda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                 6; Length 11443;
                                                                                                                                                                                                                                                                                                   .;
                                                                                                                                                                                                                                                                                                                                         GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTT
                              Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 44 11-APR-2002;
THE RECENTS OF THE UNIVERSITY OF MICHIGAN (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                             Score 1182.6; DB 6
Pred. No. 1.2e-285;
0; Mismatches 4;
                                                                                                                                                /organism="synthetic construct"
/mol_type="unassigned DNA"
/mol_type="unassigned"
/moce="synthetic"
                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 99.7%;
Matches 1185; Conservative (
sednences.
artificial
                                                                                                                                                                                                                                                                                                                                                                             5746
                                                                                                                                                                                                                                                                                                                                                                                                                                                      5806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1593
                                                                                                                                                                                                                                                                                                                                         813
                                                                                                                                                                                                                                                                                                                                                                                                                  873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6526
                                                    TITLE
JOURNAL
                                                                                                            EATURES
```

Forrest, S.M. and

φ

```
89345106
                                                                                                   2668885
                                                                                                                                                                                                                                                                                       source
                                                              JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                   FEATURES
                                TITLE
                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                    8859
                                                                                                                                                                                                                                                                                                                                    1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9039
                                                                                                                                   1292
                                                                                                                                                                                                                                   8799
                                                                                                                                                                                                                                                                                                                                                                                                                                      8979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9399
                                                                                                                                                                                                  GAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGCGCCTCTGAAAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9100 CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 9159
CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                 8560 CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                8680 AGATGATGAATTAAGCCGGCAGGCACTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                            8740 GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                             ACGABAGCAGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGCAGAGAAAATAGATGAGACCCTTGAAAACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGCTGGACCTCGAAGCTGCGCGAAGCTGAGCTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9040 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9280 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                              8620 TGACCAGTGGAAGGGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                  TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9340 CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                           8800 TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                  8860 craccadadecccadadecreccreacadadadeccadaargreacregecrecr
                                                                                                                                                                                                                                                                                                                                                                                                    ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9400 CATCTCGCCAAACAAAGAGGCCCTACTATATCAACCACGAGACTCAAACA 9448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
1113
                                                                                                                                                                                                                                                                  1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1953
                                                              1173
                                                                                                                                1233
                                                                                                                                                                                                  1293
                                                                                                                                                                                                                                                                                                                                    1413
                                                                                                                                                                                                                                                                                                                                                                                                    1473
                                                                                                                                                                                                                                                                                                                                                                                                                                  8920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1893
ک
                            쉱
                                                              ⋩
                                                                                            ď
                                                                                                                              ⋧
                                                                                                                                                              გ
                                                                                                                                                                                                ሯ
                                                                                                                                                                                                                            ရှ
                                                                                                                                                                                                                                                                ⋧
                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                ≿
                                                                                                                                                                                                                                                                                                                                                                ઠ્
                                                                                                                                                                                                                                                                                                                                                                                                    ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    й
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Я
```

```
PRI 12-SEP-1993
                                                                                                                                                                        Euteleostomi;
Human mRNA for dystrophin.

X14298
X14298.1 GI:30845
Dmd gene: Duchenne muscular dystrophy; dystrophin.
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Butele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 12446)
```

RESULT 7
4SDMDR
JOCUS
DEFINITION
ACCESSION
VERSION
VERSION
CETWOEDS
SOUNCE
ORGANISM

REFERENCE

```
Chases 1 to 12446)
Rosenthal, A.
Publishing Comparison State (1978-1989) Rosenthal A., Akademie der Wissenschaften Submitted (1978-1989) Rosenthal A., Akademie der Wissenschaften der Dbr. Zentralinstitut fuer Molekularbiologie, Robert-Rosesle Str. 10, 1115 Berlin Buch, DDR see also M18533 and M20250 for Dmd segs.; discrepancies compared to M18533 cDNA were located at x14298 pos. 496, 1772, 1965, 2449, 1887, 4229, 4504, 5075, 5332, 5630 and 7194.
                                              Two human cDNA molecules coding for the Duchenne muscular dystrophy (DMD) locus are highly homologous Nucleic Acids Res. 17 (13), 5391 (1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /noce="unnamed protein product; dystrophin (AA 1 - 3685)"
/codon start=1
/codon atatt=1
/dp.ortein_1d="CAA32479.1"
/db xref="G1:3046"
/db xref="G1:3046"
/db xref="SMISS-PROT:P11532"
/db xref="SMISS-PROT:P11532"
/translation="MLWPEPUDCYEREDVQKKTFTKWVAQPSKFGKQHIENLPSDL
QDGRRLLDLLEGLTGQKLPKEKGSTRYHALNNVNKALRVLQNNNVDLVMIGSTDIVDG
NHKLTLGLIMMILLHWQVROVMKNIMAGLQPTNSEKILLSWVRQSTRNYPQVNVINFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PENWEHAKYKWYLKELODGIGOROTVRTLNATGEEIIQOSSKTDASILOEKLGSLNIL
RWGEVCKQLSDRKKRLEEQKNILSEPQRDLNEFVLWLEEADNIASIPLEPGKEQQLKE
KLEQVKLLVEELPLRQGILKQLNETGGPVLVSAPISPERQDKLENKLKQTNLQWIKVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ral pekogei eao i kolgolekkliedleeqinhililmispirnoleiynopnoegpfd
vketeiavoakopdveeilskoghiykekpatopvkrkiedissewkavnriloelra
Rosenthal, A., Speer, A., Billwitz, H., Cross, G.S.,
Davies, K.E.
                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/chromosome="x chromosomal, xp21."
/tissue_type="muscle"
/dev_srage="fetal and adult."
99. 711156
```

```
ELIDMISLILDOYIKSORYWWODLEDINEMI IKOKZAMODLEGRRPOLEELITAAQNIK
ELIDMISLILDOYIKSORYWWODLEDINEMI IKOKZAMODLEGRRPOLEELITAAQNIK
KNYTSNQEARTIITDRIERIOWWODLEDINEMI IKOKZAMODLEGRRPOLEELITAAQNIK
KNYTSNQEARTIITDRIERIOWYKSORWANGOLEDINEMIKOOLNOLAKULEBOYSAD
GOARAKLESWKERSPYTVDALOKKTIETKOLAKOLNOLAKULEBOYSAD
DTRKYHMITENINASRNSIHKRUSEREAALEETHRILOOFPIDLEKELAMITRAETTA
DYLODATRKERLLEDSKGVKELMKOMODLOGEIEAHTDVYHNIDENSOKIIRSEGSD
DAVLLORELDWANFRKELEKTKERVINSKHELATORELLWALDGELDWALDGELSKUYO
EPRELPPEERAOWVYRLIRKOAEEVNTEWEKLNILSABOWRKHIDETGELWANGHUNDERQL
TTLGIQLSPYNLSTLEDDYTWKLLOYAVEDRYOKHIDENSOKIIRSTOGET
TTLGIQLSPYNLSTLEDDYTWKLLOYAVEDRYOKHIDENSOKIIRSTOGE
TTLGIQLSPYNLSTLEDDYTWKLLOYAVEDRYOKHIDENSOKIIRSTOGE
TTLGIQLSPYNLSTLEDDYTWKONDOPWIILOINOLTYIYDELGEGENNLLWWPLCVU
MCLIMILINVYDTGRTGRIRVLSFYTGIISLGRANDRYDESBASCHFLETSVOGP
WERAIS SWKVPYYINHETGTTCWHPKOMTELYGSLADINNVRBSAYRTAMKLEFEQSM
VALPYLHRYDAAASFGGSNIEBEVRSCROFRANNYEBEARLFEDORRL
GLLLHOSIQLTROCHOKKONDOPWIILOINOLTYIYDELGEGERNALGEDOWRI
KMHYPWYBYTSTTTRIEDTHYSKETKYRYFYRMYFAKHINNYDTSSGYNAKGH
KMHYPWYBYTSTTRIEGEDVADPAKVLKOKFTYRYFYRMYFANDYLEDDWYTHYPWYSTTPRYDSSGYNAKGH
KMHYPWYSTTTPTSGEDVADPAKVLKOKFTYRYFYRMYFANDISSSYNAKGH
KMHYPWYSTTTPTSGEDVADPAKVLKOKFTYRYFYRMYFANDHONSSYNAGH
KMHYPWYSTTTPTSGEDVADPAKVLKOKFTYRYFYRMYFANDHONSSYNAGH
KMHYPWYSTTTPTTSGEDVADPAKVLKOKFTYRYFYRMYFANDHONSSYNAGH
KMHYPWYSTTTPTTSGEDVADPAKVLKOKFTYRYFAMENSYNGSYLNOSISPNESID
DEHLLIOHYCOSLNODSPLEOOPRAFNANTIEDHN
NKQLESGLHERROLLEDPROGENATUROHREDENN
NKQLESGLHERROLLEDPROGENATUROHREDENN
NKQLESGLHERROLLEDPROGENATUROHREDDTM
NKQLESGLHERROLLEDPROGENATUROHREDDTM
REGENERARDINM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 8389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA 8569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8150 GGAAGAAACTCATAGATTACTGCAACAGTTCCCCTGGACCTGGAAAAGTTTCTTGCCTG 8209
       KQPDLAPGLTTIGASPTQTVTLVTQPVVTKETAISKLEMPSSLMLEVPALADFNRAWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACTCTTGAGACTGTACGAATATTTCTGACAGACCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTTACAGAAGCTGAAACACTGCCAATGTCCTACAGGATGCTACCCGTAAGGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTAGAAGACTCCCAAGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGTGGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        adangangaannaagccgcadccaccnanngcagccaccnnrcagcagcnancagagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTACCAGGAGCCCAGAGAGCTGCCTGAGGAGAGAGCCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 59.1%; Score 1182.6; DB 9; Length 12446; Best Local Similarity 99.7%; Pred. No. 1.2e-285; Matches 1185; Conservative 0; Mismatches 4; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8750
```

Δ

	Db 88	
	0,7	533 CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 1592
	Db 88	8870 CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 8929
	Qy 158	1593 TGAGCTGGACCTGAAGCTGGCCAAGCTGATCAAGGGATCCTGGCAGCCCGTGGG 1652
	Qy 169	653 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 1712
5 T H O	70, 17, 00 dg	1713 AATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 1772
	0y 1.	1773 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 1832
	Oy 18	1833 GAAGCTICTGCAGGTGGCCGTCGAGGACCGAGTCAGGCGCGCTGCATGAAGCCCACAGGGA 1892
	2y 18	1893 CITTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 1952
	, t	1953 CATCICGCAAACAAAGIGCCCTACTATATCAACCAGGAGACTCAAACA 2001
		CAICTCAMACAMAGIGCCIACIAIAICAACCACGAGACICAMACA 935
	RESULT 8 AX406637 LOCUS DEFINITION ACCESSION VERSION KEYMORDS SOURCE ORGANISM	AX409637 Sequence 2284 from Patent W00229103. AX409637 AX409637.1 GI:21442342 Homo sapiens (human) Homo sapiens
	KEFEKENCE AUTHORS TITLE JOURNAL	Alvares, C., Horne, D., Peres-da-Silva, S. and Vockley, J.G. Gene expression profiles in liver cancer Patent, WO 029103. A 2284 11-APR-2002;
	FEATURES : source	
	ORIGIN	/note="EMBL/GenBank Accession No. M18533"
	Query Ma Best Loca Matches	Query Match Best Local Similarity 99.7%; Pred. No. 1.2e-285; Matches 1185; Conservative 0; Mismatches 4; Indels 0; Gaps 0;
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG 872
		こう しょうりょう こうさい はんしん 作用 ひとう こうしょうしょう しょうしょう しょうりょうじょ しゅうじゅん ないしん なんしん かんしん かんしん かんしん かんしん かんしん かんしん かん
	~ ;	8/3 GCTIACACAGCCGAAAACAACTGCCAATGGCCTACGGGAAGCCTGGAAAGGCGGAAAAGGGAAAAGGGAAAAGGGAAAAGGAAAAGGAAAAGGAAAA
Maria		GCITACHARAGCIGARACHACIGCCATTGTCCACAGGTGCIACCCGTAGGGGAGGCTGGTGGAGGGGGGGGGG

2 9 2 9

q ਨੇ q

à

å

ਨੇ

q à 9 셤

AX538581 AX538581 AX538581 DEFINITION AX538581 AX538581.1 GI:25271086 KEYWORDS SOURCE ENGANISM Homo sapiens (human) ORGANISM Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.	REFERENCE Chamberlain J.S. and Harper S.Q. AUTHORS Chamberlain J.S. and Harper S.Q. TITLE Mini-dystrophin nucleic acid and peptide sequences JOURNAL Patent: WO 0229056-A 1 11-APR-2002; THE REGATS OF THE UNIVERSITY OF MICHIGAN (US) FEATURES 113957 Source //mol_type="unassigned DNA"	Length 13957; Indels 0; Gaps		QY 933 CCTAGAAGACTCCAAGGAGTAAAAGAACTGTGAAACAATGGCAAGACCTCCAAGGTGA 992 Db 8380 CCTAGAAGACTCCAAGGGAGTAAAAGAGTGAACAACAATGGCAAGACCTCCAAGGTGA 8439 QY 993 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 1052 Db 8440 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 8449	QY 1053 AFCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 1112 Db 8500 AFCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 8559 QY 1113 CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 1172 Db 8560 CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCCATTTGGAAGCCAGTTC 1172	QY 1173 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGTGGCTACAGCTGAA 1232 Db 8620 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGGCTACAGCTGAA 8679 QY 1233 AGATGATGAAGTTAAGCCGGCAGGCACCTATTGGAGGGACTTTCCAGCAGTTCAGAAGCA 1292 Db 8680 AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 8739	OY 1293 GAACGAIGIACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG 1352	OY 1413 CTACCAGGAGCCCAGAGAGCTGCCTCTGAGGAGAGCCCAGAATGTCACTCGGCTTCT 1472
	CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAAGTCCCATTTGGAAGCCAGTTC 117	1233 AGATGATAAGCCGGCAGCACTAATGGAGGCGACTTTCAAGAGGA 1292	3 TACTCTTGAGACTGTACGAATATTTCTGACAGACCAGCCTTTGGAAGGACTAGAGAACT 141	CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGACCCAGAATGTCACTCGGCTTCT	CCACGGA CCGTGGG CCGTGGG	O CGATCTCCTCATGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 915 AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 177	0 m 0 m 0	CATCTCGCCAACAACAACACTACTATATCAACCACGAGACTCAAACA 2001

RESULT 9

g

ò Dp à

ð

qq

\$ 6

QD

ò

& g

σ

```
gene="DMD"
                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                           CDS
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryotti Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

I (bases 1 to 1699)

Koenig, M., Hoffman, E.P., Bertelson, C.J., Monaco, A.P., Feener, C. and Kunkel, L.M.

Complete of oloning of the Duchenne muscular dystrophy (DMD) cDNA and preliminary genomic organization of the DMD gene in normal and affected individuals

Coll 50 (3), 509-517 (1987)
                                                                                                                                                                                                                                                             1772
                                                                                                                                                                                                                                                                                                                                                                                            9279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9399
                                                                                                                                                                                                                    9159
                                                                                                                                                                                                                                                                                                                                              TITGGGCATICAGCICICACCGIAIAACCICAGCACTCIGGAAGACCIGAACACCAGAIG 1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRI 25-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               On May 25, 2000 this sequence version replaced gi:340693.

Draft entry and computer-readable sequence kindly provided by Knoenigy, 01-APR-1988 The severity of muscular dystrophy is determined by the size of the deleted DNA segment. Deletions found in different patients were from positions 302-2200, 473-1168,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1678 to 3830)
Hoffman, E.P., Monaco, A.P., Feener, C.C. and Kunkel, L.M.
Conservation of the Duchenne muscular dystrophy gene in mice and
                           CTGGCAGAGAAAATAGAGACCCTTGAAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             9280 GAAGCTICTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                 CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                    9340 CTITGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAAGAGG
  CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                   TGAGCTGGACCTCCAAGCTGCCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                            rdadcredaccredadcredecceaagcreagerearcaaggarecredecegege
                                                                                                                                                                   CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCÄAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                           AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                        9220 TITGGGCATICAGCICICACCIATAACCICAGCACTICGGAAGACCIGAACACCAGAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTITIGGICCAGCAICTCAGCACTITICTTICCACGICTGCCAGGGICCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Koenig,M., Monaco,A.P. and Kunkel,L.M.
The complete sequence of dystrophin predicts a rod-shaped cytoskeletal protein
(ell 53 (2), 219-226 (1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGGGACTCAAACA 9448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13957 bp mRNA linear
Homo sapiens dystrophin (DMD) mRNA, complete cds.
M18533 M17154 M18026 M20250
M18533.1 GI:181856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Science 238 (4825), 347-350 (1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 13957)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87273512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88018015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          88194521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3659917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               humans
                                         8980
                                                                                                                            9040
                                                                                                                                                                                                               9100
                                                                                                                                                                                                                                                                                                  9160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9400
                                                                                     1593
                                                                                                                                                                                                                                                         1713
                                                                                                                                                                                                                                                                                                                                              1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1953
                                                                                                                                                                      1653
                                                                                                                                                                                                                                                                                                                                                                                                                                   1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EFINITION
CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESULT 10
UMDYS
OCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
PUBMED
(EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
```

```
TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA 1232
                  CGATCTCCTCATTGACTCTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                           TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACACAGATG
                                                                                                                                                                                                            GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                            CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITGGGCATICAGCICICACCGIATAACCTCAGCACTCTGGAAGACCTGAGATG
                                                                                                                                                                                                                                                                                 CTTTGGTCCAGCATCTCAGCACTTCTTTCCACGTCTGTCCAGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                    <u>AATTGCGCCTCTGAAAGAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                 AATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                         GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTACAGAAGCTGAAAACAACTGCCAATGTCCTACAGGATGCTACCCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ArcccridgaAggrrccgargargcagrccrgrracaaagacgrrrggaraacargaacrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
Length 13977;
                                                                                                                                                                                                                                                                                                                            CATCTCGCCAAACAAAGTGCCCTACTATATCAACACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 59.1%; Score 1182.6; DB 6
Best Local Similarity 99.7%; Pred. No. 1.2e-285;
Matches 1185; Conservative 0; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 13977)
Jones, K.A., Volkmuth, W. and Walker, M.G.
Bone remodeling genes
Patent: US 6426186-A 60 30-JUL-2002;
Location/Qualiflers
1. 13977
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                    13977 bp
28quence 60 from patent US 6426186.
AR220819
AR220819.1 GI:23327696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unknown.
                                                                                                                                                      9220
                                                                                                                                                                                                                         9280
                                                                                                                                                                                                                                                                                                                                 1953
                                                                                                                                                                                                                                                                                                                                                                 9400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1173
                  9100
                                                    1713
                                                                                     9160
                                                                                                                       1773
                                                                                                                                                                                         1833
                                                                                                                                                                                                                                                            1893
                                                                                                                                                                                                                                                                                                9340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       993
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
AR220819
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                  성 · 함
                                                                            g
                                                                                                                   ठे
                                                                                                                                               g
                                                                                                                                                                                    8
                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                 KMHYPMVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLPVQTVLEGDNMET
PVTLINFWPVDSAPASSPQLSHDDTHSRIEHYASRLAEMENSNGSYLNDSISPNESID
DEHLLIQHYQGSLNQDSPLSQPRSPAQTLISLESEERGGELERILADGEERNRVLQAEY
DRLKQQHEHYGLSPLSPPFEMMPTSPQSPRDAELIABAKLLKQHKGRLEARMQILEDH
NKQLESQLHRRQLLEDPQABAKVNGTTVSSPBTSLQRSDSAQPMLLRYVGSQTSDSM
GEEDLLSPPQDTSTGLEEVMEQQLNNSFPSSRGRNTPGKFPREDTM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 9039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 9099
                MCLNWLLNVYDTGRTGRIRVLSFKTGIISLČKAHLEDKYRYLFKQVASSTGFCDQRRL
GLLLHDSIQIPRQLGEVASFGGSNIEPSVRSCPQFANNKPEIEAALFLDWMRLEPQSM
VWLPVLHRVAAAETAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFFSGRVAKGH
                                                                                                                                                                                                                                                                                                                                                                                   8379
                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACGAIGIACAIAGGGCCIICAAGAGGGAAIIGAAAACIAAAAGAACCIGIAAICAIGAG 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 1712
 LCLDLLSLSAACDALDQHNLKQNDQPMDILQIINCLTTIYDRLEQEHNNLVNVPLCVD
                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                             872
                                                                                                                                                                                                                                                                                                                                                  932
                                                                                                                                                                                                                                                                                                                                                                                                                       992
                                                                                                                                                                                                                                                                             GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                   GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                     CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTGAAGCTCACAGAGTTTATCACAACCTGGATGAAAACAGCCAAAAAATGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arccricsaagerreceargarecacrecretracaagacerregaraacargaacre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 caagradaadcricagaaaadrcrcrcaacarraggrcccarrragaagccagrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAGAAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTACCAGGAGCCCAGAGAGCTGCCTGAGGAGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACGAAAGCAGGCTGAGGACATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                  GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                      Ouery Match 59.1%; Score 1182.6; DB 9; Length 13957; Best Local Similarity 99.7%; Pred. No. 1.2e-285; Matches 1185; Conservative 0; Mismatches 4; Indels 0; C
                                                                                                                                                                                                                                                                             813
                                                                                                                                                                                                                                                                                                                8260
                                                                                                                                                                                                                                                                                                                                                                                   8320
                                                                                                                                                                                                                                                                                                                                                                                                                                                      8380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1653
                                                                                                                                                                                                                                                                                                                                                  873
                                                                                                                                                                                                                                                                                                                                                                                                                       933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8860
                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
```

PAT 26-SEP-2002

2001

1112

1172

8319

ö

Gaps

ö

8379

932

8439 1052

/organism="synthetic construct" /mol_type="unassigned DNA" /db_xref="taxon:32630" /note="Synthetic"	Query Match Best Local Similarity 100.0%; Pred. No. Se-285; Matches 1180; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	OY 822 TCATAGATTACTGCAACAGTTCCCCCTGGAAAAGTTTCTTGCCTGGCTTACAGA 881	QY 882 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTAAGGAAAGGCTCCTAGAAGA 941					Oy 1182 GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGGTACGCTGAAAGATGATGA 1241 Db 1906 GAAGCGTCTGCACCTTTCTCGCAGGAACTTCTGGTGTGGGCTACAGCTGAAAGATGATGA 1965				Oy 1482 GGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTGGCTGACTGGCAGAG 1541	QY 1542 AAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 1601 DD 2266 AAAAATAGATGAGACCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGTGGA 2325	Oy 1602 CCTCAAGCTGCCCAAGCTGAGCTGATCAAGCGATCCTGGCAGCCCGTGGGCGCATCTCCT 1661 	Qy 1662 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 1721 Db 2386 CATTGACTCTCTCCAAGATCACGTCGAGAAAGTCAAGGCACTTCGAGGAAATTGCGCC 2445	QY 1722 TCTGAAAGAAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 1781
	BEBU AGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA B739 1293 GAACGATGTACATAGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG 1352 B740 GAACGATGTACATAGAGGCCTTCAAGAGGGAATTGAAAAACTAAAAGAACTGTAATCATGAG 8799	TACTETTGAGACTGTACGAATATTTCTGACAGAGCCTTTGGAAGGACTAGAGAACT 141.	CTACCAGAGAGCCCAGAGAGCTGCTCCTGAGGAGAGAGAG	CTCCGCTGA 1	1533 CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 1592 	1593 TGAGCTGGACCTCAAGCTGCGCAAGCTGAGCTGATCAAGGGATCCTGGCAGCCGTGG 1652	1653 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGAGA 1712 	1713 AATTGCGCCTCTGAAAGAGAACGTGAAGCGCGACGTCAATGACCTTGCTCGCCAGCTTACCAC	1773 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 1832 	1833 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCGGCGGCATGAAGCCCACAGGGA 1892	1953 CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001 	ESULT 12	AX538620 N Sequence 40 AX538620		EFERENCE 1 AUTHORS Chamberlain, J.S. and Harper, S.Q. TITLE Mini-dystrophin nucleic acid and peptide sequences	COURNAL FACERIC: WO UZISUSO-A WU II-ARK-2002; THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US) EATURES 1. 5339 1. 5339

q

g ò g $\stackrel{>}{\circ}$

à

셤

ò

```
/ AGE XTEEF 31 19 84 79 17

/ CETAIN AT THE WAY TO WHEEVE THE WAY ALL WAY OF SKECKOHIENLESD DOCKRELED LEGIT GOVEL PKEKGSTRY PALANN WALLRYLOKONN DIN THE WAY TO WAY SHAWE WE STANKEN INGOLYN SEELLLEN WAY SOFT WAY TO WAY THE CHANKEN INGOLYN SEELLLEN WAS STRANKEN THE WAY TO WAY THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NPNOIRILAQTLIDGGWNDELINEELETFNSRWRELHEEAVRQKLLEQSIQSAQBIB
KSLHLIQSELSSIDKQLAAYIANKVAAQWPGBAQKIQSDLYBHEISLEBKKKHQGK
ETAQRVLSQIDVAQKLQDVSRKFRLPQREADREQBLQBSKNILDEVKHLPALETKS
VEQRVVQSQLNHCYNLYKSLSEVKSEVENVIKTRQIJVQKKQTENPKELDERVTALKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MAM 09-DEC-1998
                                                                                                                                                                                                                                                                                                                                       1902 AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGACCCATCTCGCC 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris (dog)

Canis familiaris

Eukario and trazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Eukario and trazoa; Chordata; Craniata; Canidae; Canis.

Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

1 (bases 1 to 13887)

Carville,K.S., Mann,C.J., Schatzberg,S.J. and Wilton,S.D.

Direct Submission

Submitted (14-JUN-1998) ANRI, Pathology, University of Western Australia, Verdum Street, Nedlands, WA 6018, Australia

1. 13887
                                                                         2506 TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCT
                                                                                                                                                                     1842 GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                        2566 GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                       TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF070485
Cants familiaris dystrophin mRNA, complete cds. AF070485.1 GI:3982750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Canis familiaris"
/mol type="mRNA"
/strain="breed Golden retriever"
/db xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="dystrophin"
/protein_id="AAC83646.1"
/db_xref="G1:3982751"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               290. .11332
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 13
AF070485
LOCUS
DEFINITION
ACCESSION
VERSION
VERSION
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
```

FEATURES

ERREEIKIKOOLLOTKHALKOLASQRRKKALEISISHWYOYRQADDLLKCLDDIEK
KLASIPEPEREKIKEIDRELQKKKEELNAVRRQABGLSEDGAAMAYEPTOLOISKRW
REISSKAOPRILOTKHALKOLASQRRKKALEISISHWYOYRQADDLLKCLDDIEK
KLASIPEPEREKIKEIDRELQKKKEELNAVRRQABGLSEDGAAMAYEPTOLOISKRW
REISSKAOPRENINARAQIHTVHEESSYVAMTEEBDRELEZSYPSTYLTEITHYGGLSERA
GELINAPDICCAODEBDLFKOGBESIKNIKOSGORIDIHMKKTAALHSATPAERA
KLQEALSRLDFQWERVINMYKDRQGRFDRSVEWRRPHYDMKILNQWLTEABGFLKKT
QIPEWRHARKYKYRVIKELQOOLGQRQSVYNYNATOERIGEIGOSCOL
KEKLEQVKLLAEELPLRQGILKGCONTISEFORDNISEFORDNYANIPEEPONDOOL
KEKLEQVKLLAEELPLRQGILKGLAFTLAGETOLAHLLEADNYANIPEEPONDOOL
KEKLEQVKLLAEELPLRQGILKGLAFTLAGETOLAHLLEADNYANIPEEPONDOOL
KEKLEQVKLLAEELPLRQGILKGLATGATOLAGETORACH
VSRNUPEROGESTERKKETEADANTATOLOGRERACHOONIK
VSRNUPEROGESTERKKTETATORATIKGLATTAANOLETTAANOLETTAANOLETTAANOLETTAANOLETTAANOLETAAN
LESLLDRYNDANGSTERTATAANOLAGDARAA
ALLESWKEAPYTOLACORTHURALCQFPENLEXTAANOLOGD
ATHKERLLEDSKGYRELMKKOODLOGASDOWKRLHISLQGELOGHKKNTSN
HMITENLIAROASINKTRENERSERALEETHELLQGPENLYBALTAANOLOGD
ATHKERLLEDSKGYRELMKKOODLOGASDOWKRLHISLQGELOGHKANTSAETTAANOLOGD
ATHKERLLEDSKGYRELMKKOODLOGASDOWKRLHISLQGELOGHKANTSAETTAANOLOGD
ATHKERLLEDSKGYRELMKYOODLOGASDOWKRLHISLOGLOGATORATAANOLOG
ATHKERLLEDDSKGYRELMKYOODLOGASDOWKRLHISLOGLOGATORATAANOLOG
ATHKERLLEDDSKGYRELMKYOODLOGASDOWKRLHISLOGASTORLOGHKANTSAETTAANOLOG
ATHKERLLEDDSKGYRELMKYOODLOGASDOWKRLHISLOGASTORLOGATORATAANOLOG
ALSSAACDAALOOHNIKONOODNOLOGYTITYOPRICEARCACOLOGANOTANOLONU
LSLSAACDAALOOHNIKONOODNOLOLOYTITYOPRICEARCACOLOGANOTICILIA AEEWLALLLÄYQKHMÄTFDQNYDYITNWIIQADALLDESEKKKPQQKEDILKRLKAEM NDIRPKYDSTRDQAANLMANRGDHCRKYVEPKISELNHRFAAISHRIKTGKASIPLKE LEQPNSDIQKLLEPLEAEIQQGYNLKEEDFNKDMSEDNEGTVKELLQRGDNLQQRITD DSIQI PRQLGEVASFGGSNI EPSVRSCFQFANNKPEI BAALFLDWMRLEPQSMVWLDV LHRVAAAETAKHQAKCNI CKECPI IGFRYRSLKHFNYDI CQSCFFSGRVAKGHKMHYP MVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLPVQTVLEGDNMETPVTLI 8385 ò 872 932 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA Gaps 4; Length 13887; . 0 99; Indels

repeat_region 3'UTR ORIGIN

8502 8326 GGAAGAAACCCACAGATTACTGCAACAGTTCCCCTTGGACCTGGAGAAGTTCCTTGCCTG CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC Query Match
51.5%; Score 1030.6; DB 4.
Best Local Similarity 91.7%; Pred. No. 1.7e-247;
Matches 1090; Conservative 0; Mismatches 99; 813 933 993 8506 1053 8566 1113 ò g ð 엄 ò g ò 셤 ò

8685

TGACCAGTGGAAGGGTCTGCCCCTTCTCTGCAGGAACTTCTGGTGGGCTACAGCTGAA 1232

caagregagegaactreggaaaaagrefeteaacarraggrefeactregaagecagrre

8626 1173

g

```
1472
                                                                                                                                                                                    1412
                                                                                                                                                                                                                                                                                             8985
                                                                                                                                                                                                                                                                                                                                  1532
                                                                                                                                                                                                                                                                                                                                                                                                            1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9405
                                   1292
                                                                       8805
                                                                                                          1352
                                                                                                                                                                                                          TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTAGAAGGACTAGAGAAACT 8925
                                                                                                                                                                                                                                                                                                                                                        CTGGCAGAGAAAATAGAGGAGGCCCTGGAAAGACTCCAGGAGCTTCAGGAAGAAGAAGA 9105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9465
                                                                                                                                              GAATGATGTACACAGGGCCTTCAAGAGGGAATTGAAAACGAAAGGAACCTGTAATCATGAG 8865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGGGCATTCAGCTGTCACCTGATAAACCTCAACACTCTGGAAGACCTGAACACCCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACCTCCTCATTGACTCTCTCCAAGATCACCTCGAAAAAGTCAAGGCGCTTCGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTGCGCCTCTGAAAGAAACGTGAACCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTACACCTCTGAAAGAGAATGTCAGCTACGTCAATGACCTTGCTCGCCAACTCACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCCTGAACACCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGCTTCTGCAGGTGGCCATTGAGGACCGCATCAGGCAGCTGCATGAAGCGCACACAGGA
                                                             GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                   CTACCAGAGCCCAGAGAGCTGCCTCCTGAAGAGAGAGAGCCCAGAATGTCACACGGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAGCTGGATCTCAAACTACGTCAGGCAGAGGTGATCAAAGGATCCTGGCAGCCTGTGGG
TGACCAGTGGAAGCGTCTGCACCTTTCTCTTCAGGAACTTCTGGTATGGCTCCAGCTGAA
                                                                                                                                                                                    TACTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAAGT
                                                                                                                                                                                                                                                           CTACCAGGAGCCCAGAGAGCTGCCTCGTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                            CTGGCAGAGAAAAAAAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                     <u>AGATGATTAAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCTCACCAAACAAAGTGCCCTACTATATCAACCACGAGACCCAAACA 9514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                8806
                                                                                                                                                                                                                     8866
                                                                                                                                                                                                                                                                                               8926
                                                                                                                                                                                                                                                                                                                                  1473
                                                                                                                                                                                                                                                                                                                                                                        8986
                                                                                                                                                                                                                                                                                                                                                                                                                                               9046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9466
8686
                                     1233
                                                                       8746
                                                                                                            1293
                                                                                                                                                                                    1353
                                                                                                                                                                                                                                                           1413
                                                                                                                                                                                                                                                                                                                                                                                                              1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1593
Δ
                                   > D
                                                                                                                                        Ω
```

```
11-DEC-2001
                                                                                                                        Mus musculus (house mouse)
Mus musculus
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus.
                                                                                                                                                                                                           Ishikawa, K., Asai, S., Takahashi, Y., Nagata, T. and Ishii, Y. Method for examining ischemic conditions
Patent: WO 0188188-A 904 22-NOV-2001,
School Juridical Person Nihon University (JP)
Location/Qualifiers
1. 13815
                                   PAT
                                   linear
                                     DNA
                                 AX306153
Sequence 904 from Patent W00188188.
AX306153
AX306153.1 GI:17645441
                                                  CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                               AUTHORS
TITLE
JOURNAL
ESULT 14
X306153
OCUS
                                                                                                                                                                                              EFERENCE
```

source

EATURES

```
1292
                                                                                                                                                                                                                                                1052
                                                                                                                                                                                                                                                                       8490
                                                                                                                                                                                                                                                                                               1112
                                                                                                                                                                                                                                                                                                                                            1172
                                                                                                                                                                                                                                                                                                                                                                                          1232
                                                                                                                                                                                                                                                                                                                                                                                                                 8670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1772
                                                                                                                             8310
                                                                                                                                                                          8370
                                                                                                                                                                                                                         8430
                                                                                                                                                                                                                                                                                                                    8550
                                                                                                                                                                                                                                                                                                                                                                                                                                                               8730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9210
                                                                               ö
                                                                                                      872
                                                                                                                                                                                                                         8371 ccraciadaderrecadedesegreadaderegreareaadecaregeaagarerecaadeaga
                                                                                                                                                                                                                                                                       8431 AATTGAAACTCACACAGATATCTATCACAATCTTGATGAAAATGGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                               8611 reaccagresaascerrrecarcrrrcrcrrcassaacrrcrrsrsscrsaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                         9031 reaacrocaccrcaagrrececcaaecreaecreacreacearcaacearccreecaeccacrees
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9091 GGATCTCCTCATTGACTCTCTGGAAGATCACCTTGAAAAAGTCAAGGCACTTCGGGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTGCGCCTCTGAAAGAGGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            egaagaaacroaragarracrecaecaerroccreregaecreegaeaaagarerrecre
                                                                                                                                                      GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                   GATTACGGAAGCAGAAACAACTGCCAATGTCCTACAGGACGCTTCCCGTAAGGAGAAGCT
                                                                                                                                                                                                    CCTAGAAGACTCCAAGGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                               ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                           CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                   8551 CAAGTGGAGTGGAACTTCAGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                            TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                          AGATGATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAGCTGGACCTCAAGCTGCGCCAAGCTGATCAAGGGATCCTGGCAGCCGTGGG
                                                                                                       GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACCAGGAGCCCAGAGGTGCCTCCTGAGGAGGAGCCCAGAATGTCACTCGGCTTCT
                                                                                  Gaps
                                                                               .;
0
                                                          Length 13815;
                                                                                Indels
                                                        50.2%; Score 1004; DB 6; ilarity 90.3%; Pred. No. 8.2e-241; Conservative 0; Mismatches 115;
/organism="Mus musculus"
/mol_type="unassigned DNA"
/db_xref="taxon:10090"
                                                                      Similarity
                                                          Query Match
Best Local Simil
Matches 1073; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8731 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1713
                                                                                                                              8251
                                                                                                                                                      873
                                                                                                                                                                            8311
                                                                                                                                                                                                    933
                                                                                                                                                                                                                                                                                                1053
                                                                                                                                                                                                                                                                                                                                              1113
                                                                                                                                                                                                                                                                                                                                                                                            1173
                                                                                                                                                                                                                                                                                                                                                                                                                                           1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1293
                                                                                                         813
                                                                                                                                                                                                                                                  993
                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B & B & B &
                                                                                                          8
                                                                                                                           원
                                                                                                                                                      8 6
                                                                                                                                                                                                 8
                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                               8 8
                                                                                                                                                                                                                                                                                                                                      ર્જ
                                                                                                                                                                                                                                                                                                                                                             8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                  6666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 6 8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
```

		Qy 1833 GAAGCTTCTGCAGGTGCAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892 Db 9271 GAGGCTTCTACAGGTGGAAGGACCGTGTCAGACGCTGCATGAAGCCCACAGGGA 1830 Qy 1893 CTTTGGTCCAGCATCTCGAGCACTTTTCTATCCAGTCTGTCCAGGGAGAGAGC 1952 Db 9331 CTTTGGTCCAGCATCTCAGCACTTCTTTCCAGTCCAGGGAGAGAGC 1952 Qy 1953 CATTGGTCCTGCACCCACACACACACACAGGACCAGAGAGAG	Search completed: April 5, 2004, 02:39:39 Job time : 5220.76 secs	
29 1773 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 1832 29 11 ACTGGGCATTCAGCTCTCACCTTATAACCTCTGGAAGATCTGAATACCAGATG 1832 29 1833 GAAGCTTCTGCACGTGCCGTCGAGGACCTTTGGCACGTGAAGCCCACAGGA 1892 29 1833 GAAGCTTCTGCAGGTGCCGTCGAGGACCGTCAGCAGTGAAGCCCACAGGGA 1892 20 1893 CTTTGGTCCAGGATCTCAGCACTTCTTCCACTGTCCAGGGTCCCTGGGAAGAGC 1952 20 1893 CTTTGGTCCAGCACTTCTTTCCACGTCTGCAGGGTCCTGGGAAGAGC 1952 21	RESULT 15 AX538582 LOCUS LOCUS LOCUS LOCUS SEQUENCE 2 from Patent W00229056. AX538582 NACESSION AX538582 SOURCE WLSTWORDS SOURCE MLS MUSCULUS CRGANISM MLS MUSCULUS TITLE AUTHORS TITLE TITLE TITLE TITLE TOTAL OLOSTON TOTAL UNIVERSITY OF MICHIGAN (US) LOCATION/QUALITIES // Organism="Mus musculus" // AD Xxef="rexaon:loggoog" // Mol_Lype="unassigned DNA" // Ax538582 1.13815 DDNA linear PAT 23-NOV-2002 REPERENCE MLS MUSCHORIS MINI-dystrophin nucleic acid and peptide sequences JOURNAL TITLE TITLE TITLE TITLE JOURNAL TITLE TOTAL OLOSTON // Mol_Lype="unassigned DNA" // Amol_Lype="unassigned DNA" // Amol_Lype="unassigned DNA"	Solution Solution		0y 1053 ATCCTGGAAGGTTCGGATGATGCAGTCTGTTACAAGACGTTTGGATAACATGAACTT 1112 Db 8491 ATCCTGGAAGGTTCGGAAGAGCCCTGTTACAAGACGTTTGGATAACATGAATTT 8550 0y 1113 CAAGTGGAGTTCGGAAAAAGTCTCTCAACATTAGGAAGCCAGTTTG 1172 Db 8551 CAAGTGGAGTGAACTTCAGAAAAAGTCTCTCAACATTAGGACCAATTTGTTC 1172 0y 1173 TGACCAGTGGAACTTCAGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCTACAGCTGAA 1232 0y 1173 TGACCAGTGGAAGCGTTTGCATTCTTCTTCTTCAGGAACTTCTGGTGGCTACAGCTGAA 8670 0y 1233 AGATGATGAATTAAGCCGGCAGGCACCTATTGGAACTTTCCAGCAGTTTCAGAAGCA 1292

```
907
600
427
569
615
575
885
4493
486.6
424.6
345.2
3489
                                                                               334.6
324.6
312.2
                                                                                                       203.6
203.6
203.6
203.6
203.6
203.6
203.6
                                                                                                                                                                                                184.4
183
182.4
177
                                                                                                                                                                                                                                 172.8
172.8
166.2
165.2
                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
BC036103
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                       April 4, 2004, 16:52:43 ; Search time 3673.37 Seconds (without alignments) 17079.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                       1 gágotatgcotacacacagg.....acctcagcactctggaagac 2101
                                                                                                                                                                 55026578
       GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                 27513289 segs, 14931090276 residues
                                                                                                                                                               stal number of hits satisfying chosen parameters:
                                                                                  US-09-845-416-2_COPY_900_3000
2101
                                                                                                                                                                                                        ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                      nucleic search, using sw model
                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                           em_gss_vtt.: *
em_gss_vtt.: *
em_gss_man.: *
em_gss_mans.: *
em_gss_pto.: *
em_gss_pto.: *
em_gss_vt.: *
gb_gss_: *
                                                                                                                                                                                .nimum DB seq length: 0
iximum DB seq length: 2000000000
                                                                                                                                                                                                                                               em_estba:*
em_esthum:*
em_estin:*
em_estin:*
em_estin:*
em_estin:*
em_estin:*
gb_esti:*
gb_esti:*
gb_esti:*
gb_esti:*
gb_esti:*
                                                                                                                                                                                                                                                                                                                                                                                            em_gss_inv:*
em_gss_pln:*
                                                                                                                                                                                                                                                                                                                                                                                    _smnų_ss6_
                                                                                                                                                                                                                                                                                                                                                                             estom:*
                                                                                                                                                                                                                                          EST: *
                                                                                       tle:
                                                                                                                        oring table:
                                       f nucleic
                                                                                                                                                                                                                                         tabase:
                                                                                                                                                 sarched:
                                                                                                         drence:
                                                        ä
                                                        u
```

CB228986 AGENCOURT
B172851 G03349511
A739344 Pan trog1
CB177816 is21c01.x
CB177816 is21c01.x
CB177816 603349511
B1730168 6033494711
B1730168 60394711
B1730168 60394711
B1730168 60394711
B173016 B0364711
B1730168 B0394659
B0313510 60354290
B7407022 Pan trog1
CF109978 BNULTCOM1
B1250598 602934659
B17001022 60393459
B17001022 60393459
B17001022 60395459
B1700102 60395459
B1700102 60395459
B1700102 60395459
B1700102 60395459
B1700102 603954
B1700102 603954
B1700102 60396377
B1700102 60396377
B1700102 60396377
B1700102 60396377
B1700102 60396377
CE228097 1117-G85-CA377239 655768 NC
CR228097 1117-G85-CA377239 655768 NC
CE228097 1117-G85-CA377239 655768 NC

BI729851 BY399454 CB173019 BI730105 BI7301050 BM488464 BW4807022 CB547284 AY407023 CE109978 BI250598 BI250598 BI250598 BI250598 BY408162 AY408162 AY408183 AY408183 AY608183 AY6084102 AY6084102 AY6084102 AY6084102 BC036103

BC030103

BC0301

BC036103 Homo sapi AK044536 Mus muscu AY399453 Homo sapi AY399455 Mus muscu

BC036103 AK044536 AY399453 AY399455

22911

3870 3056 5691 5697

52.5 41.2 40.3

1103.4 866.6 846.2 633.4

Query Match Length DB

Score

sbult No.

Description

AL IGNMENTS

420

1522

1582

600

540

1642

099

1762

720

1822

840

780

1882

900

1702

2002

960

```
GGGCAAACTGTATTCACTCAAACAAGATCTTTTCAACACTGAAGAATAAGTCAGTGAC 2062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AKO44536 Mus musculus adult retina cDNA, RIKEN full-length enriched library, clone:A930019F21 product:dystrophin, muscular dystrophy, full
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1883 AAAAGAAGATGCAGTGAACAAGATTCACACACTGCCTTTAAAGATCAAAATGAAATGTT 1942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGAATAATTTAGTCCAAAA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2063 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  reargaarcragagarcacecaacrecrecriringaagaacaacrraaggrarrege
                                                                            1343 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1583 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1943 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                              TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                        AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                        TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                               1463 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                               GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                    ACTIGAAAAGAGIACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTIGAAAAGAGIACAGCACAGAIT 2147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Carninci, P. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AK044536
AK044536 1 GT:26090404
HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          insert sequence.
                                                                                                                                                                        1403
                                                                                                                          361
                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2123
                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
AK044536
                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                  임
                                                                                                        ò
                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: cgapbs_romail.nih.gov

Tissue Procurement: Miklos Palkovits, M.D., Ph.D.

CDNA Library Preparation: Middel J. Brownstein (NHGRI) & Shiraki

Toshiyuki and Piero Carninci (RIKEN)

Toshiyuki and Piero Carninci (RIKEN)

Toshiyuki and Piero Carninci (RIKEN)

DNA Sequencing Group at the Stanford Human Genome

Center, Stanford University School of Medicine, Stanford, CA 94305

McD Stanford Comparation Comparation Comparation Contact: (Dickson, Marx) mcdgexxil.stanford.edu

Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
Sanchez, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y., Bouffard, G.G., Blakesley, R.W., Touchman, J.W., Green, B.D., Dickson, M.C., Radriguez, A.C., Grimwood, J., Schmitz, J., Myers, R.M., Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E., Schnerch, A., Schein, J.E., Jones, S.J. and Marra, M.A. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences
Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                              Submitted (31-JUL-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone distribution: MGC clone distribution information can be four through the I.M.A.G.B. Consortium/LiNL at: http://image.llnl.gov Series: IRAK Plate: 48 Row: f Column: 7
This clone was selected for full length sequencing because it passed the following selection criteria: Similarity but not identity to protein
This clone has the following problem: retained intron.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1043 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCACTCTGACCCTACACAGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1103 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1163 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 11; Length 3870;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/mol_type="mRAN"
/db xref="taxon:9606"
/clone="INAGE:5274415"
/clone="IDPE="RRAIN, hippocampus"
/clone="lib="NIH MGC_95"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                          NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52.5%; Score 1103.4; DB 11
99.9%; Pred. No. 8.2e-235;
tive 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="Vector: pBluescript"
                                                                                                                                                                                                                                          (bases 1 to 3870) trausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .. .3870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 1104; Conserva'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                   PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                               REMARK
OMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EATURES
```

RIGIN

ŏ ≿ ă

⋩

ъ

≿

á ≿

⋩

m

Page

```
misc_feature
                                                                                                                                                                                                                                                                                                                       926;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                   Best Local
Matches 95
                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                吕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                            Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Komno, H., Okazaki, Y., Muramatsu, M. and Haysshizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ĀΑ
                                                                                                                                                                                                                                                                                            Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Sumi, N., Akiyama, J., Nishi, K., Kiteunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Yuliwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watshiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. Sequencing pipeline with 384 multitapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Reaearch (STREN), Caboratory for Genome RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Sanagawa 230-0045, Japan (E-mail:genome-resegsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-81-503-9222, Fax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs
Neture 420, 563-573 (2002)
6 (bases 1 to 3056)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayatsu, N., Hiramcto, K., Hirancka, T., Hirancka, T., Hirancka, T., Hirancka, T., Hirancka, T., Hirancka, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Nakamura, M., Nishi, K., Namuraki, A., Mirata, M., Okazaki, Y., Saito, R., Saitoh, H., Sakai, R., Ohno, M., Ohsato, N., Okazaki, Y., Tagami, M., Tagawa, A., Shinagawa, A., Shiraki, T., Tagami, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Muramatsu, M., and Hayashizaki, Y., Tayami, A., Tomaru, A., Toya, T., Yasunishi, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKBN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             prepare mouse tissues.

Retina RNA was provided by Dr. Stefano Gustincich (Department of Setina RNA was provided by Dr. Stefano Gustincich (Department of Neurobiology, Harvard Medical School, 220 Longwood Ave., Boston, 02115, USA) whose assistance is gratefully acknowledged. Please Usi.bttp://enome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FANTOM Consortium.
Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
High-efficiency full-length cDNA cloning
Meth. Enzymol, 303, 19-44 (1999)
927/9253
10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Mus_musculus"
/mol_type="mRNA"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rect Submission
                                                                                                                                                                                                                             20499374
11042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                           MEDLINE
PUBMED
FERENCE
AUTHORS
                                                                                                                                                                                                                           MEDLINE
PUBMED
FFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
FERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
FERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
  TITLE
JOURNAL
                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SATURES
                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
```

```
1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1663
                                                                                                                                                                                                                                   mouse cDNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         944 gagriariecerreacacacecrecriarerreceacererrandarrecacacacada 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1184 ACAGTTTCATGCTCATGAGGGATTCATGATGGATCTGACATCTCATCAAGGACTTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1004 recrireacadeártrada a defecto cada da defecto a contrator a defenda de d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .064 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 CCAGITICAIACICAIGAGGGGIACAIGAIGGAITIGACAGCCCAICAGGGCCGGGIIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .724 retretraraticscacearritacicaacaacacicerritiaciacarcecriticaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGAGGACACATTGCAAGCACAAGAAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1304 AGCTGAAGTGCAAGAACAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1364 TAGCATGGAAAAAAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1604 TGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1664 AGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue type="retina"
/clone lib="RIKEN full-length enriched mouse cDNA lib/dev. stage="adult"
1. .3056
/note="dystrophin, muscular dystrophy (MGD|MGI:94909, GB|NM_007868, evidence: BLASTN, 100%, match=999)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11; Length 3056;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41.2%; Score 866.6; DB 11;
86.5%; Pred. No. 4.2e-182;
ative 0; Mismatches 149;
/db_xref="FANTOM_DB:A930019F21"
/db_xref="MGI:2409854"
                                                                                      /db_xref="taxon:10090"
/clone="A930019F21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
```

Db 405 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 464	QY 181 TGCTGAGGACACATTGCAAGGACACACACAAGAAGATTTCTAATGATGGAAGTGGTGAAGA 240 Db 465 TGCTGAGGACACATTGCAAGGACACAAGAGAGATTTCTAATGATGAGGTGGAAGTGGTGAAAGA 524	Oy 241 CCAGITTCAIACTCAIGAGGGTACATGAITTGACAGCCCAICAGGGCCGGGTTGG 300	OY 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAAAATTTATCAGAAGATGAAGA 360	OY 361 PACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420	OY 421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480	OY 481 GARAGACTIGATGCTGGCTAACAAAACAGAAGAACAAGGAAAATGGAGGAAGA 540		601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACACA	661 TGATGAATCTAGAGAATCAGGACAACTGCTGCTTTGGAAGAACTAAGGTATTGGG	Db 945 IGAIGAAICIAGIGGAGAICACGCAACIGCIGCTITGGAAGAACAACITAAGGIAITGGG 1004	Db 1005 AGATGGGCAAACATCTGTAGATGGACAGACAGGAGGCCGCTGGGTTCTTTTACAAGACT 1064	1065 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAG	Qy 841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 900	901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 960	Db 1099GITTTAAAAGGGATCTAGAAAAAAAAAAAATCAT 1136 Qy 961 GGGCAAACTGTATTCACTCAACAAAAACAGTGACTGAAGAATAAGTCAGTGAC 1020	1137 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTTTTTT	Oy 1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAA 1080 Db 1197 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1256	Qy 1081 ACTTGAAAAGAGTACAGCACAGACT 1105 	RESULT 4 AY399455 LOCUS AY399455 LOCUS MUS musculus HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence, genomic survey sequence.
	Y 901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGAAAAAGCATCCAT 960 	y 961 GGGCAAACTGTATTCACTCAAACAACATCTTTCAACACTGAAGAATAAGTCAGTGAC 1020 	y 1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080 	Y 1081 ACTTGAAAAGAGTACAGACT 1105 	17.3	OCUS AX359453 EFINITION Homo sapiens HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence, genomic survey sequence. CCESSION AY399453	_	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. BFERENCE 1 (bases 1 to 5601)	Clark, A.G., Glandwak, S., Michellou, K., Modak, F., Murphy Todd, M.A., Tanenbau, D.M., Civello, D.R., Lu, F., Murphy Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, Adams, M.D. and Cargill, M.		to 5691) Glanowski,S., Nielson,R., Thomas,P., Kejari	Todams, A. Admendam, D. C. Cavello, D. K., Duter, Marky, J. D. Perriera, S., Wang, G., Zheng, X. H., White, T. J., Shineky, J. J., Admen, M.D. and Cargill, M. Thirty D. Perriera Cargill, M. Marko, D. Cardill, M. Marko, D	AL	them based on alignment. S Location/Qualifiers urce 1 . 5691	/organism="Homo sapiens" /mol_type="Genomic DNA" /db_xref="taxon:9606"	/100	Query Match 40.3%; Score 846.2; DB 29; Length 5691; Best Local Similarity 89.1%; Pred. No. 1.7e-177; Matches 986; Conservative 0: Mismatches 3: Indels 117; Gans 2:	1 GASCTATGCCTACCACAGGCTGCTTATGTCACCCCTCACACGGGGGCCCTT 60 1	y 61 TCCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTTCATTGAGAGGA 120

771 AAAAGAACTAGATGACTGGTTAACAAAAACTGAAGAGAAACTAAGAAAATGGAGGAAGA 830 541 GCCTCTTGGACCTGATCTTGAAGACCTAAAAACGCCAAGTACAACAACAAACA	AGAAGATCTAGAACAAGAACAAGATCAGGGTCAATTCTCTCACTCA	721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACT 780 [901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT 960 1105ACTTTAAAAATGCGGATCTAGAAAAGAAAAAGACCACCAT 1142 961 GGGCAAACTGTATTCAACAACAAGAACTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020 1143 GGAAAAACTAAGTTCAACTCAACAACAACTGAAGAATAAGTCAGTGAC 1020	1021 CCAGAAGACGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080 1203 TCAAAAGATGGAAATCTGGATGGAAAACTTTGCACAAACGTTGGGACAATTTAACCCAAAA 1262 1081 ACTTGAAAAGATACAGCACAGACT 1105 1263 ACTTGAAAAGATACAGCACAAATT 1287	CB228986 728 bp mRNA linear ES AGENCOURT 11499247 NICHD Rh.Ov1 Macaca mulatta cDNA cl IMAGE:6884820 5', mRNA sequence. CB228986 CB228986.1 GI:28280564 EST. Macaca mulatta (rhegus monkey) Macaca mulatta (rhegus chordata; Craniata; Vertebrata; Bu Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Bu		DNA Sequencing by: Agencourt Bioscience Corporation Clone distribution: NCI-CGAP clone distribution information can be found through the I.M.A.G.B. Consortium/LINL at: http://image.llnl.gov Plate: LLCM1135 row: e column: 11 High quality sequence stop: 583. Location/Qualifiers
2 6 2	3 8 8 8 8	3 8 3 8 3 8	6666	8 6 8 6	RESULT 5 CB28986 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM	REFERENCE AUTHORS TITLE JOURNAL COMMENT	FEATURES
GI:39755444 us (house mouse) us		JOURNAL Science 302 (5652), 1960-1963 (2003) PUBNED 14671302 JEFERENCE Clark, A.G., Glancwski, S., Nielson, R., Thomas, P., Kejariwal, A., FUTHORS Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. TITLE Direct Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA WMENT This Sequence was made by sequencing genomic exons and ordering	them based on alignment. Location/Qualifiers Loca	Query Match Best Local Similarity 77.1%; Pred. No. 4e-130; Matches 852; Conservative 0; Mismatches 136; Indels 117; Gaps 2; 1 GAGCTARGCCTACACAGGCTGCTTATGTCACCACTCTGACCTACAGGGAGCCCAT 60		241 CCAGTTTCATACTCATGAGGGTACATGATTTGACAGCCCATCAGGGCCGGGTTGG 300	/ 421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480

ω

```
Eukaryota; Medazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musnae; Loases 1 to 834)

St (Dases 1 to 834)

NIH-MGC http://mgc.nci.nih.gov/

Nutional Institutes of Health, Mammalian Gene Collection (MGC)

Nutional Institutes of Health, Mammalian Gene Collection (MGC)

Londact: Robert Strausberg, Ph.D.

Email: Gapbercmennin.ih.gov

Tissue Procurement: The Cepko Laboratory

CONA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: Inc. Consortium (LINL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at:

http://inage.llnl.gov

Plate: LLAM11908 row: e column: 03

High quality sequence stop: 796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="IMAGE:5357162"
/tissue_type="retina"
/lab_host="DH10B [phage-resistant)"
/lab_host="DH10B [phage-resistant)"
/lone lib="NHH MGC 94"
/note="Organ: eye; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sall; Cloned unidirectionally; Oligo-dr primed.
Average insert size 3.3 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAATTTAGTCCAAAAACTTGAAAAGAGTACAGACAGACTCATAGATTACTGCAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           igaigaaaccaigacaagaiciccaagaagaaattgaaactcacacagafatcacaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCTGGATGAAAACAGCCAAAAATCCTGAGATCCTGGAAGGTTCCGATGATGCAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCTTGATGAAAATGGCCAAAAAATCCTGAGATCCCTGGAAGGTTCGGATGAAGCACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGGAGGCGACTITCCAGCAGITCAGAAGCAGAACGAIGIACAIAGGGCCTICAAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             regeregrearreccaecaerreagascagareareararacaragecerreagege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAAAAGAGTAAGTGAGCAAGAGCTGCTTTGGAAGAAACTCATAGATTACTGCAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rechacadoacocrrecechaadaaaaacrechadaadareee-addaacreadadade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTACAAAGACGTTTGGATAACATGAATTTCAAGTGGAGTGAACTTCAGAAAAAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rcaacarraggroccarrragaagcaagrrcrgaccagragaagcgrrrgcarcrrrcrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 592.4; DB 12; Length Pred. No. 3.7e-121; 0; Mismatches 86; Indels
                                                                                                                                                                                                                                                                                                                                                                                               1. .834
/organism="Mus musculus"
/mol_type="mRNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.2%;
nilarity 88.4%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
677; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Si
Matches 677;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               523
            ORGANISM
                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BI729851
603349511F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5357162 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                      /clone="INAGE:6884820"
/tissue type="Ovary"
/lab_most="DH10B (phage-resistant)"
/clone lib="NICHD Rb tov1"
/note="Organ: ovary; Vector: pDNR-LIB; Site_1: Sfi I;
Site_2: Sfi I; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.0-4.0 kb. Tissue pooled from
pre-pubertal, post pubertal sn menopausal monkeys
Constructed by Clontech. Note: this is a NICHD Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCCAAGATGGGAATGCCTCAG 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAACTGAAAGAGTTGAATGACTGGCTGACAAAAACAGAAGAAGAACAAGGAAAATGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 GAAAGAACCCTTGGACCTGATCTTGAAGACCTAAAAGGCCAAGTACAACAACAACAAAAAGGT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAGCAACTTAAGGT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAGAAAAAAAAAGATGCAGTGAACAAGATTCACACAACT-GGCTTTAAAGATCAAAATG 893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TICAGAAAAAAAAGAIGIGAACAGGAIICACACAACIGGGCIIIIAAGGAICAAAAIG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTTGGTAATATTCTACAATTGGGAAGTCAGCTGATTGGAACAGGGAAATTATCAGAAGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGGGAGATCGATGGGCAAACATCTGCAGATGGACAGAAGACCGCTGGGTTCTTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                 GGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGTTGGAAGAACAACTTAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                        .;
H
                                                                                                                                                                                                                                                                                                             28.4%; Score 597.2; DB 14; Length 728; llarity 97.0%; Pred. No. 3.1e-122; Conservative 0; Mismatches 18; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATGITATCAAGTCTTCAAAAACTGGGCCGTATGTAA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAA 931
                                organism="Macaca mulatta"
                                                   /mol_type="mRNA"
/db_xref="taxon:9544"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BI729851.1 GI:15706864
EST.
Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BI729851
                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                   Mar
Local Sr.
619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 6
31729851
COCUS
               source
                                                                                                                                                                                                                                                                                                                                     Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /ERSION
CEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                   ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       й
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
```

1184

Gaps 3; 163

1244

222

1304

282

1364

342

1424

402

1484

1544

522

462

1604

440 PATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACTGAAAGGTTGAATGACTGG 709 NNTTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACTGAAAGGTTGAATGACTGG 500 CTAACAAAAACAGAAGAACAAGGAAAATGGAGGAAGGCTCTTGGACTGG 769 CTAACAAAAACAGAAGAAAGAAAGAAATGGAGAAAGGAGCTCTTGGACCTGTTTTTTTT	00 00 00 00 00 00 00 0	CY 980 AAACAAGAICTTCCAACAGAATAAGTCAGAGACCCAGAAGCATGG 1039	RESULT 8 CB177816 CB177816 CB177816 LOCUS LOCUS LOCUS LOCUS LOCUS LOCUS LOCUS LOCUS LOCUS ACCESSION CB177816 CB177817 CB1778 CB1778 CB1778 CB1778 CB1778 CB
1605 AATTGAAAACTAAAGAACCTGTAATCATGAGTACTTTGAGACTGTACGAATATTTCTGA 1664 583 AATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGA 1664 583 AATTGAAAACTGAAAACTGTAATCATGAGACTGTGTGAGAATATTTCTGA 642 643 CAGAGCAGCCTTTGGAAGACTAGAAAACTCTTACCAGGAGCCCAGAGAACTGCTT 723 643 CAGAGCAGCCTTTGGAAGACTAGAGAACTCTTACCAGGAGCCCAGAGAACTGCTCT 702 724 GAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAACCAGAGAACTCCTCT 763 703 GAAGAAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGTCAATACT 762 704 GAGGAGAAAATTGAACTGCACTCCGCATCACGAAAGCAGGTCAACGCT 762 705 706	SULT 7 399454 CUS	JOURNAL Science trios JOURNAL Science 302 (5652), 1960-1963 (2003) PUBMED 14671302 Z (bases 1 to 5676) AUTHORS Clark, AG., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Tanenbaum, D.M., Givello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, C., Zheng, X.H., White, T.J., Sninsky, J.J., Adms, W.D. and Cargill, M. TITLE Direct Submission JOURNAL Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA DMMENT This sequence was made by sequencing genomic exons and ordering them based on alignment.	S ON S C C C C C C C C C C C C C C C C C C

α

```
CB850319 1047 bp mRNA linear EST 01-SEP-2003 MRA-0070 MOUSE ADULT RETINA Mus musculus cDNA 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206 ICAIGAGGGAITCAIGAIGGAICIGACAICICAICAAGGACITGITGITGGIAAIGITACA 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            373 AGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAG-CTAGCATGGAAA 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       432 AACAAAGCAATTTACATAGAGTTTTAATGGATGTCCCAGAATCAGAAACTGAAAGAGTTGA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAAATTAAAAGAACTAG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGACTGGCTAACAAAAQAGAAAGAAGAAGAAAAATGGAGGAAGAGCCTCTTGGAC 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CIGATCITGAAGACCIAAAACGCCAAGIACAACAIAAGGIGC-TICAAGAAGAICIA 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CIGATCITIGAAGATCIAAAATGCCAAGIACAACAACATAAGGIGCTITCAAGAAGATCIA 565
                                                                                                                                                                                                                                                            Mus musculus (house mouse)
Mus musculus
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Musmanlia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus

1 (bases 1 to 1047)
Yu,J., Farjo,R., MacNee,S.P., Baehr,W., Stambolian,D.B. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Annotation and analysis of 10,000 expressed sequence tags from developing mouse eye and adult retina Genome Biol. 4 (10), R65 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGACTGGTTAACAAAACTGAAGAGAACTAANAAAATGGAGGAAGAGCCCTTTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATAGTTÁCCAAACTGCTTTANAAGAAGTACTTTCATGGCTTCTTTCTGCCGAGGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     266 GTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGATGAAGAAGCTGAAGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATGAGGGGTACATGATTTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14; Length 1047;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Swaroop, A.
Department of Ophthalmology and Visual Sciences
Kellogg Eye Center, University of Michigan
Storec, 1000 Wall St., Ann Arbor, MI 48105, USA
Tel: 734 615 2246
Fax: 734 647 0228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tch 23.5%; Score 493.2; DB 14; al Similarity 83.2%; Pred. No. 4.8e-99; 610; Conservative 0; Mismatches 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/db_xref="taxon:10090"
/tissue_type="retina"
/clone_lib="MOUSE_ADULT_RETINA"
/note="Vector: pSPORTI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .1047
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: Bwaroop@umich.edu
                                                                                                                                                                   CB850319.1 GI:34380806
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Swaroop, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22881944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14519200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S:
Matches 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        909
                                        RESULT 9
CB850319
LOCUS
ACCESSION
VERSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /diche="MAGE:655129"
/tissue_type="Purified pancreatic islet"
/tissue_type="Purified pancreatic islet"
/tissue_type="Purified pancreatic islet"
/clone_lib="RR85 islet"
/clone_lib="RR85 islet"
/clone_lib="RR85 islet"
/note="Organ: Pancreas; Vector: pBluescript SK(-); Site_l:
Not[; Site_2: XhoI; cDNA made by oligo-dT priming.
Size-selected on agaronse gel. Average insert size ~lxb. 5'
XhoI site was destroyed after directional cloning.
Amplified once. Contact information: Hiroshi Inoue, MD,
Merabolism by. (Alan Permut Lab), Washington University
School of Medicine, Box 8127, 660 South Buclid Ave., St.
Louis, MO 63110, E-mail: hinoue@imgate.wustl.edu, Tel:
314-362-1916, Fax: 314-747-2692."
Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge,
MA 02138
Tel: 617-495-1812
Fax: 617-495-8857
Email: 610-495-8857
Email: 610-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                209 TAATATICTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATTATCAGAAGATGAAGA 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  269 CCAGITICATACICATGAGGGGTACATGATGGATTIGACAGCCCATCAGGGCCGGGTIGG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           149 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      89 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCTACACACACACGCTTATGTCACCACCACCACCTACACGCAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24.2%; Score 509; DB 14; Length 595; 100.0%; Pred. No. 1.3e-102; ive 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAGAGTTGAATGACTGGCTAACAAAA 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAGAGTTGAATGACTGGCTAACAAAA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Organism="Homo sapiens"
mol_type="mRNA"
db xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.
Matches 509; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                         PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RIGIN
```

≿ ŏ ≿ ă ≿ બ્ર ⋩ ъ ≿ ă ≈ સ ≿ ă ⋩ ક્ ⋩

ν. ..

```
This clone (DKFZp762L078) is available at the RZPD in Berlin.
Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
Berlin- Charlottenburg, GERMANY; Email: clone@rzpd.de.
140 TTTACGGAAGCAGAAACAGAGCTGCCAATGTCCTACAGGACGCTTCCCGCTAAGGAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST (Ottenwaelder, et al.)
Unpublished (1999)
Contact: MIPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AL121550.1 GI:5927551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTCTACGA 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            740 GCTCCTACGA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                  1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1750 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
AL121550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                셤
                                                                                                                                           8
                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                        \stackrel{>}{\sigma}
                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 연
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                           ò
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BI730168 750 bp mRNA linear EST 20-SEP-2001
603349711F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5357187 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1157 CTTACAGAAGCTGAAAC--AACTGCCAATGTCCTACAGGATGCTACCCG-TAAGGAAAGG 1213
                                             625
                                                                                       729
                                                                                                                                                                                                                                                       788 AAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGAAAAGAA 847
                                                                                                                              626 AGCGGGGATCATGCAACAGCTGCTTTGGAANAACAACTTTTAAGGNACTGGGAGATCGATG 685
                                                                                                                                                                         730 GGCAAACATCTG-TAGATGGACAGAGAAGCGCTGGGTT-CTTTTACAAGACATCCTTCTC 787
                                                                                                                                                                                                                686 GCCAAATATCTGCAAAATGCACTGAAAACCGTTGGATTGTTTTTACANGATTTTCTTCTT 745
                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 750)
MIH-MGC http://mgc.nci.nih.gov/.National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conteact: Robert Strausberg, Ph.D.

Email: cgapbe-r@mail.nih.gov
Tissue Procurement: The Cepto Laboratory
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.lln.gov
Plate: LLAMI1908 row: f column: 04
High quality sequence stop: 747.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="retina"
/lab_host="DH10B (phage-resistant)"
/clone_lib="NIH_MGC_94"
/note="Grgan: eye; Vector: pCMV-SPORT6; Site_1: NotI;
/note="Grgan: eye; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 3: 3 kb. Library enriched for
full-length clones and conserructed by Life Technologies.
Note: this is a NIH_MGC Library."
    GAACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGATCT
                                                                                       AGTGGAGATCACGCAACTGCTTCTTTGGAAGAACAAC-TTAAAGGTATTGGGAGATCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1098 CACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGG-
                                         566 GAACAGGAGCAGGTCAAGGTCAACTCGCTCACATGCAAGTAGTAGTGGGTGATGAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          80 cagaaacicaiagairacigcagcagriccciciggacciggagaagiricrirccigga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 23.4%; Score 491.6; DB 12; Length 750; Best Local Similarity 89.3%; Pred. No. 1e-98; Matches 598; Conservative 0; Mismatches 64; Indels 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Mus musculus"
/mol_type="mRNA"
/db_xref="taxon:10090"
/clone="IMAGE:5357187"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BI730168.1 GI:15707181
                                                                                                                                                                                                                                                                                                                                               848 GATGCAGTGAACA 860
                                                                                                                                                                                                                                                                                                                                                                                        806 TGCATTGANAACA 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BI730168
  611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESION
IYWORDS
NURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3SULT 10
[730168
)CUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VIGIN
```

```
1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              579 bp mRNA linear EST 04-SEP-2003
DKFZp762L078 rl 762 (synonym: hmel2) Homo sapiens cDNA clone
DKFZp762L078 S', mRNA sequence.
CICCTAGAAGACTCCAAGGG--AGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAG 1271
                                                                                                                                                                                                                                                                                                                                1331 CTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATG 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1391 AACTTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCC 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1511 CTGAAAGATGATGATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1571 AAGCA-GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAAT 1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCG 1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                380 AATTTCAAGTGGAGTGAACTTCAGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGGA 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ingolstaedter Landstr.1, D-85764 Neuherberg, Germany
This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DEMZ): Email s.wiemannedkfz-heidelberg.de;
sequenced by MediGenomix (Martinsried/Germany) within the CDNA
sequencing consortium of the German Genome Project. No sl sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                1272 GTGAAA-TTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATC
                                                                                                                                                                                                                                                  260 GAGAAAGTTGAAACTCACACAGATATCTATCAATCTTTGATGAAAATGGCCAAAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1630 CATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAAGGACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        680 GAAACTCTACCAGGAGCCCAGAGAACTGCCTCCTGAAGAAGAGCTCAGAATGTCACTCG
                                                                                                                                                                                                                                                                                                                                                                                                         320 creasarccresaassrrcssarsaascacccrerracaaasactrrssaraas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     440 AGIICIGACCAGIGGAAGCGIIIGCAICITICICIICAGGAACIICIIGIIIGGCIACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     500 creanadardardancreadcecreadecacearcearceardarrreceaecacrad
                                                                             200 crecradedagaereceaggecagreagagaereargareaagaecargecaagarerecaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                620 cardadracreredadadrerendadaararrerendadadedecerregaageacrada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1451 AGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            560 AAGCACGAATGATATACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Eutele
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 579)
Ottenwaelder, B., Obermaier, B., Mewes, H.W., Gassenhuber, J.
Wiemann, S.
```

```
/dev stage="Breast, leg:Embryo(d19); post-hatch(1d,1,3,5,7,9,11 weeks); growth plate(1d,7d,14d post-hatch)"
/lab_host="E. coli EMDH10B"
/clone lib="Normalized Chicken Breast Muscle, Leg Muscle, and Epiphyseal Growth Plate CDNA library (pgm2n)
/note="Vector: pGWYSPORT6; Library made from equivalent pools of cotal RNA isolated from each tissue (embryonic muscle 33.3%; juvenile muscle 33.3%; and epiphyseal growth plate:33.3% of the final RNA pool). Single pass sequencing from 5:-end"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1243 GCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCA 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATAC 1782
                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="Breast muscle, leg muscle and epiphyseal
growth plate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1363 CCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120 CCTGTTGCAGAGACGTCTGGATAACATGAACTTCAGATGGAGTGAGCTTAGGAAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420 GGCAGATCAACCAGTAGAGGGACTGGAAAAGGTCTATCCAGAACCAAGAGACCTATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1783 TGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60 chaccreeardhahaceecachaharccreachreccreeaheecreacheerecre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240 retreaccaactitriccariccaccarccaricaaccaccarcaatraaacaccaaccacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1543 TATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300 carridorogadararricccacrorocadaadcadaardarorroaradaacrrrcaadad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1603 GGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360 GGAGCTGAAAACAAAGAACCTGTTATCATGAATGCACTTGAGACTGTGCGACTCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACAGAGCAGCCTTTGGAAGGACTAGAAACTCTACCAGAGCCCCAGAGAGCTGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480 TGAGGAGAGGCCCAGAATGTCACTAAAGTTCTCCGAAGGCAAGCAGATGATGTCAGNAC
      Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGATGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ottawa Res. Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
      CDNA library, USDA/IFAFS Animal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 424.2; DB 12; Length 663;
Pred. No. 1e-83;
); Mismatches 144; Indels 1;
                                                                                                                                                                   www.chickest.udel.edu
                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                         1. .663
/organism="Gallus gallus"
/mol_type="mRNA"
/strain="Commercial broiler
Strains 90 & 21"
               Project
Unpublished (2002)
Contact: Larry A. Cogburn
University of Delaware
Townsend Hall, Newark, DE 19717, U.
Tel: 302-831-1335
Fax: 302-831-2825
Email: cogburn@udel.edu, www.chic
                                                                                                                                                                                                                                                                                                         /db_xref="taxon:9031"
/clone="pgm2n.pk007.117"
/sex="Male and Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
Epiphyseal Growth Plate
Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loca
Matches
                                             JOURNAL
COMMENT
                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                         1319
                                                                                                                                                                                                                                                                                                                                                                                                                                     1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BM48B464

pgm2n.pk007.117 Normalized Chicken Breast Muscle, Leg Muscle, and Epiphyseal Growth Plate cDNA library (pgm2n.) Gallus gallus cDNA clone pgm2n.pk007.117 5' similar to sp| P11533 | DND CHICK Dystrophin pir|S02041 dystrophin, muscle - chicken emb|CAA31746.1| (X13369) dystrophin (AA 1 - 3660) [Gallus gallus], mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1619
                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGA 1739
                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Curror Sariary Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallus.

[ (bases 1 to 653)
Cogburn, L. A. and Monsonego-Ornan, B.
ESTS from Normalized Chicken Breast Muscle, Leg Muscle, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1440 ATTIGGAAGCCAGTICTGACCAGTGGAAGCGTCTGCACCTTICTCTGCAGGAACTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251 ATTIGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311 TGTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371 CAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTICAAGAGGGAATIGAAAACTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431 AACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131 GCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTT
                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                               Sall"
                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                             Site_2:
                                                                                                                                                                                                                                                                          579;
                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                              (MeWo cell line)"
                                                                                                                      /tissue_type="melanoma (MeWo cell line,
/dev stage="adult"
/lab_her=bH10B"
/clone_lib="762 (synonym: hmel2)"
/note="Vector: pSport1; Site_1: Not1;
                                                                                                                                                                                                                                                                      Score 486.6; DB 9;
Pred. No. 1.3e-97;
0; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1740 ATGTCACTCGGCTTCTACGAAAGCAGGCT 1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               579
                                             organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGTCACTCGCTTCTACGAAAGCAGGCT
                                                                 /mol_type="mRNA"
/db_xref="taxon:9606"
/clone="DKF2p762L078"
        ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BM488464.1 GI:18609395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gallus gallus (chicken)
Gallus gallus
                                                                                                                                                                                                                                                                      23.2%;
ilarity 97.2%;
Conservative
                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                      Query Match
Best Local Simil
Matches 495;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                              71
                                                                                                                                                                                                                                                                                                                                                                                                                                     1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCESSION
TERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                 RIGIN
```

119

1422

179

1482

239

1542

299

1602

359

1662

419

1722

```
CGAGCACAGACCAGTGGAAGCGTTTACATCTCTCTCTTTCAGGAACTTTTGGCCATGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (house mouse)
Mus musculus
Bukaryota; Matazoa; Chordata;
Mammalia; Butheria; Rodentia;
1 (bases 1 to 2334)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
BC011062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                      ઠે
                                                                                                 8 B
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev stages=adult"
/lab_host="ballo"
/lab_host="ballo"
/lab_host="ballo"
/lab_host="csecret"
/lab_host="cs
                                                                                   1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rounds using conditions adapted from Soares tal., PNAS (1994) 91: 9228-9232 and Bonaldo et al., Genome Research 6 (1996): 791, except that a significantly longer reannealing hybridization was used."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 644)

Boardman, P.E., Sanz-Ezquerro, J., Overton, I.M., Burt, D.W., Bosch, E.,
Frong, W.T., Tickle, C., Brown, W.R.A., Wilson, S.A. and Hubbard, S.J.
A Comprehensive Collection of Chicken cDNAs

Curr. Biol. 12 (22), 1965-1969 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1508
                                                                                                                                                                                                                                                                                                                                                                                   bp mRNA linear EST 28-NOV-2002
gallus cDNA clone ChEST508c24 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                            599
                                                                                                                                       629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
TGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Simon Hubbard
Department of Biomolecular Sciences
(University of Manchester Institute of Science and Technology
(UMIST)
PO BOX 88, Manchester, M60 1QD, UK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 644;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
18.5%; Score 389; DB 13; Length 64.
Best Local Similarity 75.5%; Pred. No. 7e-76;
Matches 482; Conservative 0; Mismatches 156; Indela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Gallus gallus"
/mol_type="mRNA"
/srxin="Compton Line 151"
/db xref="taxon:9031"
/clone="ChEST508c24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 01612008930
Fax: 01612360409
Email: Simon Hubbard@umist.ac.uk.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                BU313510 644
603540290F1 CSEQCHN61 Gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                BU313510
BU313510.1 GI:25821511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gallus gallus (chicken)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'sex≕"Female"
                                                                                                                                                                                        TGA 1905
                                                                                                                                                                                                                                              TGA 662
                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Curr. Bic
22335534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12445392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gallus
                                                                                                                                                                                        1903
                            540
                                                                                1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1449
                                                                                                                                                                                                                                              099
                                                                                                                                                                                                                                                                                                                      ESULT 13
U313510
OCUS
EFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
MEDLINE
PUBMED
OMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EATURES
```

```
1568
                                                                                                                                        1628
                                                                                                                                                                                                                                                                                    1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1868
                                                                                                                                                                                                                                                                                                                                                                                                                            1869 CCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGC 1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1929 CCGTGGGCGATCTCCTCTCTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTC 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1989 GAGGAGAAATIGCGCCTCTGAAAGAGAACGIGAGCCACGICAAIGACCTIGCICGCCAGC 2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-MAR-2003
mRNA.
                                                                                                                                                                                                                                                                                                                                                        246
                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247 AAAAGGTCTATCCAGAACCAAGAGACCTATCACCTGAGGAGAGGGCCCAGAATGTCACTA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            307 AAGTTCTCCGAAGGCAAGCAGATGTCAGAACTGAGTGGGATAAGCTAAATCTACGTT 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 427 CAATGGATGAACTAGACCTGAAACTGCGCCAGGCTGAAGCATTCAAGGGATCCTGGCAGC 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      547 GAGCAGAAATGGTGCCCCTTANAGAGAAGGTGCATCAAGTCAATGAGCTGGCTCACCGGT 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata, Vertebrata, Euteleostomi,
Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Strausberg, R.

Direct Submission
Submitted (25-JUL-2001) National Institutes of Health, Mammalian
Submitted (25-JUL-2001) Cancer Genomics Office, National Cancer
Gene Collection (MCC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1809 CCGCTGACTGGCAGAGAAAATAGATGAGACCCCTTGAAAGACTCCAGGAACTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         487 CAGTGGGGGATCTGCTGATAGACTCTCTGCAGGATCACTTAGAAAAAGTCAAGGTTTATC
                                                                       67 AATTGAAGGATGAATTAAAACAGCAAGCACCATTGGTGGAGATATTCCCACTGTGC
                                                                                                                                                                                                                                                                                        1629 TCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGCCTTTGGAAGGACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center code: BCM-HGSC
Web site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: amggbcm.tmc.edu
Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Loulseged,
                                                                                                                                            1569 AGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAA
                                                                                                                                                                                                                127 AGAAGCAGAATGATGTTCATAGGACTTTCAAGAGGGAGCTGAAAACAAAAGAACCTGTTA
                                                                                                                                                                                                                                                                                                                                                        187 rcardaargcacridaadacreredecrerrecrescadarcaacagradagacres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1749 GGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     367 crecrearreschananahahahrahrenecrerrenahahahacrecaesererreneshes
1509 AGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WITH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
Email: cgapbs-remail.nih.gov
Tissue Procurement: Gilbert Smith, Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
DNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing Dy: Baylor College of Medicine Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA linear HTC clone IMAGE:3979320,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2049 TIACCACTITIGGGCATICAGCICICACCGTATAACCIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              607 recerecereararicaerrefeceearacaerere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BC011062 2334 bp
Mus musculus, Similar to utrophin,
BC011062.1 GI:15029695
```

883

FEATURES

ORIGIN

유

ሯ

9 ል q à g $\stackrel{>}{\alpha}$ 유 ਨੇ 셤 à

⋧

```
9915 bp DNA linear GSS 15-DEC-2003
Homo sapiens UTRN gene, VIRTUAL TRANSCRIFT, partial sequence,
Ay407020
1702 AACAGGTIGCAAGAAAICAGIAITCTGIGGCAGGAATTATTGGAAGAGCAGTGTTG 1761
                                                                                                                                                                                                                                                                                                                                                                                                                                1004 AAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGG 1063
                                                                                                                                                                                                                                                           944 AAGAAAAAGCAATCCATGGGCAAACTGTATTCACTCAAAGATCTTCTTTCAACACTG 1003
                                                                                                                                                                                                                                                                                                                                                                               1882 ATGAAGAGGCAGACTCTGGATCAACTGAGTGAGATTGGCCAAGGATGTGGGCCAATTACTC 1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1942 AGTAATCCCAAGGCATCTAAGAAGATGAACAGTGACTCTGAGGAGCTAACACAGAGATGG 2001
                                                                                                                                               .762 GAGGCTTGGCTCACCGAAAAGGAAGAGGCTTTGAATAAAGTTCAAACCAGCAACTTTAAA 1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryotan, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

1 (bases 1 to 9915)

1 clark, A.G. Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Reritara, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, White, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (Dates 1 to 9412)
Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,
Clark, A.G., Glanowski, S.,
Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,
Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J.,
Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
Fockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering
them based on alignment.
Location/Qualifiers
                                                                                                                                                                                                          884 GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         918 cagcacrercacreagerreacaresarcresacaccrarcagarrecerresagas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  103 CAGITCATIGAIGGAGGIGAAGIAAACCIGGACCGITAICAAACAGCITTAGAAGAAGI
                                                                                     824 AGTGCATGGCTTTCAGAAAAAAAGAAGATGCAGTGAACAAGATTCACACAAACTGGCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 29; Length 9915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15.9%; Score 334.6; DB 29; Length 62.5%; Pred. No. 1.5e-63; ive 0; Mismatches 314; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2002 GATTCTCTGGTTCAGAGACTCGAAGACTCTTCTAACCAG 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1064 GATAATTTAGTCCAAAACTTGAAAAGAGTACAGCACAG 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="UTRN"
/locus_tag="HCM2752"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY407022.1 GI:39762993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 9915)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 523; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .9915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
AY407022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                     ò
                                                                                                                                         d
                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1582 CACATGGTGGTGATTGTGGATGAAAACAGTGGGGAGAGTGCCACAGCTCTTCTGGAAGAT 1641
                                                                                           can be found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1102 CIGACGIGGCIGCIGICGCGGAGGACACGIICCAGGAGCAAGAIGACAIIICIGAIGAI 1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1162 GTCGAAGAAGTCAAAGAGCAGTTTGCTACCCATGAAACTTTTATGATGGAGCTGACAGCA 1221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1222 CACCAGAGCAGCGTGGGGAGCGTCCTGCAGGCTGGCAACCAGCTGATGACACAAGGGACT 1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1282 CTGTCAGAGGAGGAGGAGTTTGAGATCCAGGAACAGATGACCTTGCTGAATGCAAGGTGG 1341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1342 GAGGCGCTCCGGGTGGAGAGCATGGAGAGCAGTCCCGGCTGCACGACGCTCTGATGGAG 1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1402 crecadadadacaderideaderiereaderideerideerideerekadaadadeedearr 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1522 GAACATAAAAGTTTGCAAAATGACCTTGAAGGTGAACAGGTGAAGGTAAATTCCTTAACT 1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1042 AGCACGGTCACTGAAGTGGACATGGATTTGGACAGCTACCAGATAGCGCTAGAGGAAGTG 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  104 AGTICATIGATGGAGAGTGAAGTAAACCIGGACCGTTATCAAACAGCTTTAGAAGAAGTA 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    164 TTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGAT 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIGGAAGIGGIGAAAGACCAGITICAIACICAIGAGGGGIACAIGAIGGAITIGACAGCC 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAA 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    344 ITATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGAT 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    584 CAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACT 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  644 CACATGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTGTGGAAGAA 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACITAAGGTATIGGGAGATCGATGGGCAAACATCIGTAGATGGACAGAAGACCGCTGG 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GITCITITACAAGACAICCITCICAAAIGGCAACGICTIACIGAAGAACAGIGCCITITI 823
                                                                                     Clone distribution: MGC clone distribution information can be for through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Series: IRAK Plate: 23 Row: j Column: 4 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF analysis, Similarity but not identity to protein This clone has the following problem: retained intron. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:10090"
/clone="INAGE:3979320"
/clone="INAGE:3979320"
/clone="INAGE:3979320"
model. 10 month old virgin mouse. Taken by biopsy."
/clone lib="NGI_CGAP_Mam1"
/clone lib="NGI_CGAP_Mam1"
/note="Vector: pCMV-SPORT6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     524 AGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAA
Kowis, C.R., Sneed, A.J., Martin, R.G., Muzny, D.M., Nanavati,
A.N., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 343; DB 11; Length 2334;
Pred. No. 1.6e-65;
0; Mismatches 410; Indels 0
                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"
/mol_type="mRNA"
/strain="FVB/N"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 59.0%;
Matches 589; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    764
```

ö

유 ò g à

엄 ð a à a à

```
1518 cchgrinchdaaaciriderdaececriedachecagrariecerrieachdaacaere 1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .398 AGAACATAAAAGTTTGCAAAGTGATCTTGAGGCTGAACAGGTGAAAGTAAATTCACTAAC 1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1458 rcacarderderentrerreardandaaacadredadadagaderecracardadada 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1578 GAATAGGTTACAAGAAATCAATATATTGTGGCAGGAATTATTGGAAGAACAGAGGTGCTTGTT 1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1098 Acaccadadorororocorocorocos de acaccado de acaccado de contra de como de de como 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1158 TCTGTCAGACGAAGAATTTGAGATTCAGGAACAGATGACCCTGCTGAATGCTAGATG 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .218 GGAGGCTCTTAGGGTGGAGAGTATGGACAGACAGTCCCGGCTGCACGATGTGCTGATGGA 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1278 Actigciógiada a de de caracides de confectadas de confectadas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1338 TCAGAAGATGGAAACTTGCCCCTGGATGATGATGTAAAATCTCTACAAAAGCTGCTAGA 1397
                                                                                                                                                                                                                                                                                                        978 gergaderiderindrigeridaddacherinecaddaddaddarcararineridanda 1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .038 retreaagaagreaagaceagrreeaaceaaceareaagerrraigaregaacreacec 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGC 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   283 CCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    343 ATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      403 GGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAAAGCAATTTACATAGAGTTTTAATGGA 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        523 AAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACA 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           583 ACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCAC 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            643 TCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              703 ACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTG 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                763 GGTTCTTTTACAAGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTT 822
163 ATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGA 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  823 TAGTGCATGCCTTTCAGAAAAAAAAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAA 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1698 AGACCAAAAGGAACTAAGTGTCAGTGTTCGACGTCTGGCTGTAAGTGATGGGGTTGT 1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCT 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   883
```

earch completed: April 5, 2004, 08:15:01 ob time : 3685.71 secs

		v											l and and and	· -	d 100 e	d .ed .e	- 11 (٦ اغ	0.0			Ovel v	-1 O C	o 0, 0	
		es/se	101							inted,		ď	1, Appli 60, Appl	CO, App	Appli	Appl	Appl S, Appl	14, App	15639, 1	1186, Aj	Appl 7, App	14, App 32, App		5, Appl 518081 518081		
		Seconds) ell updat	aagac 2			_				o have a eing pri: on.		cription	Sequence	Tuence Tuence	Tuence :	Inence :	Thence (nence i	nence	nence	sequence		ence	equence tent No.	nce n	
Ġ.		101.891 (ignments)	actctggaaga			1365418			* *	ance t sult b ributi		Desc	9 9 6	2000	0 00 0	0 00 0	มู่ผู	Sec	Sec	000	8 8 8	Sec	S S S	മാപ	200	
6 ugen Lt		al me	actca			••			. seq: * . seq: * . seq: * . seq: * .OMB. seq	d by cha the res				.					639	186			47		47	
ion 5.1.6 04 Compus	_	Search ti (without 11443.127	000		idues	arameters		w	SA_COMB SB_COMB SA_COMB SB_COMB PCTUS_COMB	redicter core of tal sco	IES		7-875A-1 1-970B-60	-022A-1 -048A-1 -01B-7	-501B-9	-594-35 -501B-5	-501B-4	-463-14 -875A-1	-976-15 8-452A-	-532A-1	-073-4 -855A-3	-855A-4 -527-82	-312D-8 -069-3	-844B-3	-001C-4	
e version 3 - 200	sw mode	58:13 ;	Y_900_3	1.0	446 resi	gen par		ummarie	2/ina/ 2/ina/ 2/ina/ 2/ina/ 2/ina/	sults p o the s the to	SUMMAR		9-687	9-42	0-091	0-091	9-091	3-232	9-621	701-6	9-25	3-961	9-620	8-31 810-	100	
i o	ing	16:5	-2_COP) acacac	pext	475	cho	00	0% 100% 45 Bl	NA:* data/ data/ data/ data/ data/	fre alt e of		ij	SO-SD	Sign	Sign	SS	SD	SD OS	SU 4	SE	SUS	us us	Sn	51 51	as a	
GenCo) (c) 199	u8:	04,	6-2 tac	G.	277	fying	00000	ch st	99999999 944444 9444444	er of equa. lysis		DB	 4.4.0											0 W W		
Copyright	earch,	4, 20	-845-416 ctatgcct	TY_NUC	seds,	atis	200	um Mat um Mat ng fir	d Pate gn2_6/ gn2_6/ gn2_6/ gn2_6/ gn2_6/	numb an or y ana		Length	5952 13977	19307	10320	200	700	7218	505	ı	01	193303	1751	1991	1848	
Copy	leic s	April	US-09- 2101 1 gagc	IDENTI Gapop	682709	hits s	ength:	Minimum Maximum Listing	188ue 11: / Q 22: / Q 33: / Q 44: / Q 55: / Q	is th cer t ived	ch	Query Match	53.8	41.2	16.3	, w u	. r.	ы ы	2.2							
	eic - nucl		score:	table:		umber of	DB seq 1 DB seq 1	cessing:		ed. No. : ore great		Score	1103.4	י טים	າຕເ	2.007	n on	യസ	vo.	<u>ო</u> ⊂	\circ	തത	00 00 1	38.5 38.5 2.5 2.0	օաա	,
	nucle	i i	itle: erfect equence	oring	ırched	al nu	nimum ximum	-pro	abase	Prec scol		sult No.	1 7 7 7	n 4r n	വധ	- 00 0	70	11	13	115	113	19	22	6 4 c	7 9 0	I
	2	Ħ	erf equ	201	ear	ota	ini	ost	ata			98.	;	υυ				υ	υo)	. n	υ				

.55-76 Sequence 76, App.	135-4 Sequence 4, Appl	172-4 Sequence 4, Appl	Sequence 1,	15C-5 Seguence 5, Appl	~	Patent No. 5210183	34A-22 Sequence 22, App]	131-22 Sequence 22, App	.71E-263 Sequence 263, Api	005-17 Sequence 17, App	7 Sequence 17,	4 Sequence 14,	108-23 Sequence 23, Appl	90-1 Sequence 1, Appl	Sequence 236,	Sequence 83	Sequence 193,
US-09-247-155-76	US-08-985-335	US-09-410-372-4	US-09-092-218-1	US-09-336-115C-5	US-08-961-527-21;	5210183-1	US-08-887-534A-22	US-09-527-431-22	US-08-956-171E-263	US-09-007-005-1	US-09-244-796-1	US-09-014-969-1	US-10-204-708-2	US-09-426-290-	US-09-385-982-236	US-08-956-171E-83	US-08-630-915A-193
4	ო	m	4	4	4	છ	4	4	4	m	m	N	4	4	ო	4	4
1394	2082	2082	2160	2915	3902	1886	1845	1845	7075	289	289	2447	11049	168575	608	724	2873
1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
38	37.4	37.4	37.2	37.2	37.2	36.8	36.6	36.6	36.6	36.2	36.2	36.2	36.2	36.2	36	36	36
28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
υ	υ	υ		υ	υ				υ				O			υ	

ALIGNMENTS

PESULT 1 199-06-67-878-1 196-06-67-878-1 196-06-67-878-1 Sequence 1. Application US/0966785A PREET NO. 5544768 PRICE REPERENCE: 00792 PRICE RITIOR DATE: 1099-10-13 PRICE APPLICATION NUMBER: 00/193 PRICE
--

1131 CCAGITICATACICATGAGGGGTACATGATGGATITGACAGCCCATCAGGCCGGGTTGG 1190	1103	1102
301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360	9 1	
1191 TAATATICIACAATIGGGAAGTAAGCIGATIGGAACAGGAAAATIATCAGAAGATGAAGA 1250	2271	AGAAATGCCATCTTCCTTGATGTTGGAGGTACCTGCTCTGGCAGATTTCAACCGGGCTTG 2350
1917年の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の	Qy 1103	1102
	Db 2331 GAC#	GACAGAACTTACCGACTGGCTTTCTCTGGTTGATCAAGTTATAAAATCACAGAGGGTGAT 2390
日で、それでいた日本ででで、これでは、これでは、コードでは、コープ・コープ・コープ・コープ・コープ・コープ・コープ・コープ・コープ・コープ・	Qy 1103	1102
100C0104020202020202020202020202020202020202	Db 2391 GGTC	GGTGGGTGACCTTGAGGATATCAACGAGATGATCATCAAGCAGAAGGCAACAATGCAGGA 2450
	Qy 1103	1102
481 GAMAGAGILGAATGACIGGCIAACAAAAACAGAAGAAGAAGAACAAGAAAAIGGAAGAAGA 540 1371 GAAAGAGAGAGAACAAGAAAAAAAAAAAAAAAAAAAAA	Db 2451 TTTC	TITGGAACAGAGGCGTCCCCCAGTTGGAAGAACTCATTACCGCTGCCCAAAATTTGAAAAA 2510
401440000144440014040404040444044044404	Qy 1103	1102
	Db 2511 CAAC	CAAGACCAGCAATCAAGAGGCTAGAACAATCATTACGGATCGAATTGAAAGAATTCAGAA 2570
正で、本ででは、このでは、このでは、このでは、このでは、このでは、このでは、このでは、こ	Qy 1103	1102
AGANGAL CLAGGALCAGALCAGGGGGGGGGGGGGGGGGGGGGG	Db 2571 TCAC	TCAGTGGGATGAAGTACAAGAACACCTTCAGAACCGGAGGCAACAGTTGAATGAA
	Qy 1103	1102
1	Db 2631 AAAC	AAAGGATTCAACACAATGGCTGGAAGCTAAGGAAGAAGCTGAGCAGGTCTTAGGACAGGC 2690
	Qy 1103	1102
/ZI AGATUGATGGGCAAACATUTGTAAATGGAAAGAACATUGGGTTUTTITACAAGACAT /80	Db 2691 CAG	CAGAGCCAAGCTTGAGTCATGGAAGGAGGGTCCCTATACAGTAGATGCAATCCAAAAGAA 2750
**************************************	Qy 1103	1102
781 CCTICTCAATGGCAACGTCTTATGAAGACACACGTCTTTTTAGTGCATGGCTTTCAGA 840	Db 2751 AAT	AATCACAGAAACCAAGGGGTTGGCCAAAGACCTCCGCCAGTGGCAGACAAATGTAGATGT 2810
CCITCICAAAIGGCAACGICIIACIGAAGAACAGIGCCIIIIAGIGCAIGCCIIIICAGA	Qy 1103	1102
841 AAAGAAGATGCAGTGAACAAGATTCACAACATCTGGCTTTAAAGATCAAATGAAGTT 900 1721 AAAAGAAGAAGAAGAAGAAGAAGAAGAACAACAAAGATT 900	Db 2811 GGC	GGCAAATGACTTGGCCCTGAAACTTCTCCGGGATTATTCTGCAGATGATACCAGAAAAGT 2870
1、1つ1には近りでははなり、1くではないです。 1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、	Qy 1103	1102
A C C A A C A A A A A A A A A A A A A A	Db 2871 CCA(CCACATGATAACAGAGAATATCAATGCCTCTTGGAGAAGCATTCATAAAAGGGTGAGTGA
ALCANGICITCANAMALIGOCCOITTANAMAGCOGATICANAMAMAMAMAMAGATANAMAGATANAMAGTONICANAMAGATANAMAMAMAGATANAMAGAT	Oy 1103	
GGGCAAACTGTATTCACTCAAACAAGATCTTTTTAACACTGAAGAATAAGTCAGTGAC		
1021 CCAGAAGAAGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080	Qy 1141 AAAC	AAAGTITCITGCCIGGCTIACAGAAGCTGAAACAACTGCCAAIGTCCTACAGGATGCIAC 1200
CCAGAAGACGAAGGCTGGATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAAA		U
1081 ACTTGAAAAGAGTACAGCACAG	1201	
	3051	CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA 3110
1103 1102	1261	AGACCICCCAAGGIGAAAITGAAGGICACACAGAIGITIAICACAACCIGGALGAAAAACAC 1520
2031 GGAAGATTTTGTCTAAAGGGCAGCATTTGTACAAGGAAAAACCAGCCACTCAGCCAGT 2090	3111	5 E
1103 1102	1321	CCAAAAAATCCTGGGATCCCTGGAAGGTTCCCATTGTGCAGTCCTGTTTTTT 1580
2091 GAAGAGGAAGTTAGAAGATCTGAGCTCTGAGTGGAAGGCGGTAAACCGTTTACTTCAAGA 2150	3171	
1103 1102	1381	GGATAACATGAAGTGCAAGTGAACTTCGAAAAAAGTCTCTCAACATTAGGTCCCA 1440
2151 GCTGAGGGGAAAGCAGCCTGACCTAGCTCCTGGACTGACT	3237	
1103 1102		TITICATA CARACTERISTICA CARACTERISTICA CONTINUE DE LA CONTINUE DE LA CARACTERISTICA CONTINUE DE LA CARACTERISTICA CONTINUE DE CAR
2211 TCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCCAAACT 2270		

qq

8 8 8

GAGCTATGCCTACACACACACGCTTATGTCACCACTCTGACCCTACACGGAGCCCATT 60	TGCTGAGGACACATTGCAAGGACAAGGAGATTTCTAATGATGTGGAAGTAGAAGGAAG	361 AACTGAAGTACAAGAGCAGATGAATTCACTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 121 TAGCATGGAAAAACAAAGCAATTTACATAGATTTTAATGGATCTCCAGAATCAGAAACT 480 1519 TAGCATGGAAAAACAAAGCAATTTACATAGATTTTAATGGATCTCCAGAATCAGAAACT 157 481 GAAAGATTGAATGACTGGCTAACAAAAAAAAAGAAAGAAA	AGARGATCTAGAACAAGACAAGTCAGGGTCAATTCTCTCACTCA	781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1936 1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1936 841 AAAAGAAGATGCAGTGTTTACTGAAGAACAGTGCTTTTTAAAGTGCATGATTTTAGA 1936 1939 AAAAGAAGATGCAGTGATCACAAACTGGCTTTAAAGATCAAATGAAATGTT 1996 901 ATCAAGTCTTCAAAAACTGGCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGAAATGAATCCAT 2056 1939 AAAAGAAGATGTTCACAAAATTTAAAAGCGGATCTAGAAAAAAAA
	AGGACTAGAGAAACTCTACCAGGAGGCCCAGAGAGCTGCCTCCTGAGGAGAGGCCCAGAA 359 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGAGGAGAAAATTGAA 180 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAA 365 CCTGCACTCGGCTTCTACGAAAAGCAGGCTGAGGGGCCATGAATACTGAGAGGAAAATTGAA 365 CCTGCACTCGGCTGCTGGCAGAAAAAAAAAAAAAAAAA	3711 TCAMARGGCCACGGATGAGCTGCACCTCAAGCTGAGCTGAGGTGATCAAGGGATC 3770 1921 CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCAGAAAGTCATCAA 1980 3771 CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAGAAACTCAA 3830 1981 GGCACTTCGAGGAAATTGCGCCTCTGAAAGAAAACGCAGCCAGTCAATGACTTGC 2040 3831 GGCACTTCGAGGAAATTGCGCCTCTGAAAGAAACGCAGCCAGTCAATGACCTTGC 3890 2041 TCGCCAGCTTACCACCATTGGGCATTCAGCTCTCACCGTATAACCTCAGGAAGA 2100 3891 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 3950		FILE REFERENCE: BP.0014 US CURRENT APPLICATION NUMBER: US/09/484,970B CURRENT FILING DATE: 2000-01-18 NUMBER OF SEQ ID NOS: 172 SOFTWARE: PERL Program SEQ ID NO 60 LENGTH: 13977 TAPE: DNA ORGANISM: Homo sapiens FRATURE: NAME/KEY: unsure COTHER INFORMATION: 112294, 13369 OTHER INFORMATION: a, t, c, g, or other 3-09-484-970B-60 QUERY MATCh Best Local Similarity 99.9%; Pred. No. 0;

વ

⋩

```
12849
                                                                                                      13209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12669
                                  13269
                                                                                                                                                                           13149
                                                                                                                                                                                                                                                13089
                                                                                                                                                                                                                                                                                                                       13029
                                                                                                                                                                                                                                                                                                                                                                                             12969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12909
                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                               480
241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG.300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACAACAAGGTGCTTCA
                                13328 ACAGITICAIGCICATGAGGGATICAIGAIGAATCIGACAICTCAICAAGGACTIGITGG
                                                                                                                                                                                                                                                13148 TAGCATGGAAAAACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATTT
                                                                                                                                                                                                                                                                                                                     13088 AAAAGAACTAGATGACTGGTTAACAAAAACTGAAGAGAGAACTAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          rdardaarccagccgrgarcargcaacagcrgcrrrcgaagaagaacrraaggracrcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGAAGATGCAATGAAGAACATTCAGACAAGTGGCTTTAAAGATCAAAATGAAATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12548 TCAAAAGATGGAAATCTGGAAAAACTTTGCACAACGTTGGGACAATTTAACCCAAAA
                                                                                                      13268 TAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGATGAAGA
                                                                                                                                          AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                         13208 AGCTGAAGTGCAAGAACAAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC
                                                                                                                                                                                                               TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                     GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAGAAGAACAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                            GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTTCTAAAATGGCAGCATTTACTGAAGAACAGTGCCTTTTTAGTACATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAAAAACTAAGTTCAATCAAGATCTACTTTCGGCACTGAAAAAAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                                                       TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Trustees of the University of Pennsylvania Wilson, James M. Risher, Krishna J. Chehr, Shu-Jen Weitzman, Matthew TITLE OF INVENTION: Improved Adenovirus Virus and Methods of Use Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12488 ACTTGAAAGAGTTCAGCACAAATT 12464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081 ACTIGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 10, Application US/09427048A Patent No. 6203975 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
US-09-427-048A-10/c
                                                                                                                                          361
                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196
                                                                     301
                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                             13028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12608
                                                                                                  g
                                                                                                                                                                   g
                                                                                                                                                                                                      à
                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                      à
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ठे
                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13508 TCCTTCACAGCATTTGGAAGCTCCCAGAGACAAGTCACTTGACAGTTCATTGATGGAGAC 13449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13448 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC 13389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13568 gadriardectircacacacacitéctraretreceacteretratereceacacacacacere 13509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 IGAAGTAAACCIGGACCGITAICAAACAGCTITAGAAGAAGTATTATCGIGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gapa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 19307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/836,022A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 866.6; DB 3;
Pred. No. 4.1e-254;
0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                            O Box
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AFFLEXION NUMBER: 05/06/836,022A
FILING DATE: 05/06/836,022A
CLASSIFICATION 1435
APPLICATION DATE: APPLICATION DATE: 08/08/331,381
FILING DATE: 08-0CT-1994
ATTONEN' AGENT INFORMATION: NAME: Bak, Mary E. REGISTRATION NUMBER: 31,215
REPERSONEN' DOMER: 31,215
TELECHONE: 215-540-9200
                                                                                                                                                                                                                                                                                                                                       E: Howson and Howson
Spring House Corporate Cntr, P
                                                2179 ACTTGAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 19477
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
CMCMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                 1081 ACTTGAAAGAGTACAGCACAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPAX: 215-540-5818
INFORMATION FOR SEQ ID NO: 10: SEQUENCE CHARACTER.STICS: LENGTH: 19307 base pairs TYPE: mucleic acid STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 86.5%;
Matches 956; Conservative
                                                                                                                                                                                                                                                                                                                                                                         CITY: Spring House
STATE: Pennsylvania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: unknown MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JS-08-836-022A-10
                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
```

ዋ

ጵ

දි

à

g

⋩

ል

```
13088 AAAAGAACTAGATGACTGGTTAACAAAAACTGAAGAGAGAACTAAGAAAATGGAGGAGGAAGA 13029
                                                                                                                                                                                                                                                               12909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12848 AGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTACAAGATAT 12789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12728 AAAAGAAGATGCAATGAAGAACATTCAGACAAGTGGCTTTAAAAGATCAAAATGAAATGAT 12669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12908 TGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG 12849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12788 rcrrcraaaarggcagcarrrracrgaagaacagrgccrrrrragracarggcrrrcaga 12729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12548 TCAAAAGATGGAAATCTGGATGGAAAACTTTGCACAAACGTTGGGACAATTTAACCCAAAA 12489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               961 GGGCAAACTGTATTCACTCAAAGATCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                            9
                                                                                                                                                          13028 GCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                               721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12668 Gricaagrichicacaaaananchachtraaaaanagahaaagaaaaagccaaccar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                            601 AGAAGATCTAGAACAAGAAGAAGTCAGGGTCAATTCTCTCACACCTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
  661 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
ITLE OF INVENTION: Utrophin gene expression
FILE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT FILING DATE: 1998-66-18
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR APPLICATION NUMBER: GB 955962.8
PRIOR PILING DATE: 1995-12-19
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR PILING DATE: 1995-07-26
PRIOR PILING DATE: 1996-10-24
NUMBER OF SEC ID NOS: 15
SOFTWARE: Patentin Ver: 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12488 ACTTGAAAAGAGTTCAGCACAAATT 12464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081 ACTTGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7, Application US/09091501B Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: CDS
LOCATION: (11)..(6037)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-091-501B-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 7
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                              임
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13568 dadriardectreacadecrectrardirececercrearrecadadecadecera 13509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13388 TGCCGAGGATACATTGCGAGCACAAGGAGAGATTCAAATGATGTTGAAGAAGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13328 acaditicargencardadegariteardanegarereaearereaearereareaeaerrearde 13269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13268 TAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGATGAAGA 13209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13208 AGCTGAAGTGCAAGAACAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC 13149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13148 TAGCATGGAAAACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAAATT 13089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13448 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 CCAGITICATACTCAIGAGGGGIACAIGATGGAITTIGACAGCCCAICAGGGCCGGGITGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 19307;
                                            ADDRESSEE. Howeon and Howeon
STREET: Spring House Corporate Cntr, P O Box 457
STREET: Spring House
STATE: Pennsylvania
COUNTRY: USA
ZITE: 19477
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/427,048A
FILING DATE: 21-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
41.2%; Score 866.6; DB 3; Length
Best Local Similarity 86.5%; Pred. No. 4.1e-254;
Matches 956; Conservative 0; Mismatches 149; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,022
ATTORNEY/AGENT INFORMATION:
NAME: Bak, Mary E.
REGISTRATION NUMBER: 31,215
REGISTRATION NUMBER: 31,215
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215-540-9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: unknown
MOLECULE TYPE: CDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 215-540-5818
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 19307 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S-09-427-048A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
```

```
1814 AGTPATCCCAAGGCATCTAAGAAGATGAACAGTGACTCTGAGGAGCTAACACAGAGATGG 1873
                                                                                                                                                                                                                 Sequence 9, Application US/09091501B Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Artificial Sequence
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 10320
                                                                                                                                                                              RESULT 6
US-09-091-501B-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     284
                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                         셤
                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1453
                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1154 Cricricadaddaddaddarrridadarrccaddaacadaridacrrigcraargcaaddaga 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1214 daggecerrecederrecaderecardeadaggecagerecedecrecaecrererreardada 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1454 CACATGGTGGTGATTGTGGATGAAAACAGTGGGGAGAGTGCCACAGCTCTTCTGGAAGAT 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1574 AACAGGTIGCAAGAAATCAGTATTCTGIGGCAGGAATTATTGGAAGAGCAGTGTCTGTTG 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1634 gaggerriegericaecegaaaaggaagagerrrigaaraaarreaageegaeerriraaa 1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              944 AAGAAAAAGCAATCCATGGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACAGT 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1754 arcaacaccacacrercacareacheacheacheacheacheacheacheacharnache 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1004 AAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGG 1063
                                                                                                                                                                                                                                                                                                                                                                                                   974 CTGACGTGGCTGCTGTCCGCGGAGGACACGTTCCAGGAGAAGATGACATTTCTGATGAT 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1034 grogaagargaagogagorgrogascogargaagostargaagoscogagos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1094 caccadadeadedrededadeerecrecredeerededadeeredereareadeadeader 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1514 CAGTTACAGAAACTGGGTGAGCGCTGGACTGTATGCCGCTGGACTGAAGAACGTTGG 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        583
                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCC 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       344 TTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404 GAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGAT 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  644 CACATGGTGGTGGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAA 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                824 AGTGCATGGCTTTCAGAAAAAAAAAGAAGATGCAGTGAACAAGATTCACAACAACTGGCTTTAAA 883
                                                                                                                                                                                                                                                                                                            973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAA 343
                                                                                                                                                                                                                                                                                                                                                      164 TIATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGAGTTTCTAATGAT 223
                                                                                                                                                                                                                                                                  104 AGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTA
                                                                                                                                                                                                                                                                                                   914 AGCACCGTCACTGAAGTGGACATGGATTTGGACAGCTACCAGATAGCGCTAGAGGAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    464 CTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAACAGAAGAAGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        524 AGGAAAATGGAGGAAGAGCCTCTTGGACCTGAAGACCCTAAAACGCCAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              584 CAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      394 GAACATAAAAGTTTGCAAAATGACCTTGAAGCTGAACAGGTGAAGGTAAATTCCTTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            764 GITCITITACAAGACATCCTTCTCAAATGGCAACGICTTACTGAAGAACAGTGCCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      884 GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        704 CAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGG
                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                        0
    FEATURE: OTHER INFORMATION: Description of Artificial Sequence: Chimeric
                                                                                                                                                                            Query Match 16.3%; Score 343; DB 4; Length 6045; Best Local Similarity 59.0%; Pred. No. 4.5e-94; Matches 589; Conservative 0; Mismatches 410; Indels
                                                                   NAME/KEY: misc_feature

: LOCATION: (724)...(758)

: OTHER INFORMATION: Precise residue is left open

:S-09-091-501B-7
                                                                                                                                                                                                                                                                                                                                                                                                                                             224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ਨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         台
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                  ጵ
                                                                                                                                                                                                                                                                                                            ď
                                                                                                                                                                                                                                                                                                                                                      አ
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                               ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             હ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋩
```

```
1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1094 caccadaaccarocirocadocarocirocirocadocadocadocirolardacacados 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      404 GAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGAT 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          974 creacerecrecrecrececeaecacecerecrecaeaecaaeareacarricrearear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .034 circanachachachachachachachachanachiriandhachachachachach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     104 AGTICATICARGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        344 TTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              164 TTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGGACACAAGGAGAGTTTCTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: CDS
LOCATION: (11)..(10312)
PEATURE: OTHER INFORMATION: Description of Artificial Sequence: Full length
OTHER INFORMATION: utrophin construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 10320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
16.3%; Score 343; DB 4; Length 10
Best Local Similarity 59.0%; Pred. No. 6.6e-94;
Matches 589; Conservative 0; Mismatches 410; Indels
1064 GATAATTTAGTCCAAAACTTGAAAAGAGTACAGCACAG 1102
                                                                 1874 GATTCTCTGGTTCAGAGACTCGAAGACTCTTCTAACCAG 1912
                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
ITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT FILING DATE: 1996-06-18
PRIOR APPLICATION NUMBER: DCT/GB96/03156
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR APPLICATION NUMBER: GB 9525962-8
PRIOR APPLICATION NUMBER: GB 9515797.9
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-10-24
STORMARE: PATENTING OFFE: 1996-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature

. LOCATION: (724)...(758)

. OTHER INFORMATION: Precise residue is left open

US-03-091-501B-9
```

```
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1926
                                                                                                                                                                                                                                                                                                         507 ACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGT 1566
1387 CATGAACTICAAGIGGAGTGAACTICGGAAAAAGICTCTCAACATTAGGICCCATTIGGA 1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1567 TCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGT 1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1687 AGAGAAACTCTACCAGGAGCCCAGAGAGTGCCTCCTGAGGAGAGAGCCCAGAATGTCAC 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1747 TCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCA 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                964 chenenedakocadokacencacahreadecedakonoradakeenedakonoradakanindade 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1927 GCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACT 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1142 CARAGRAGAATTCTCCCCCATGAAGATGGAGTAAAGTTGGTGAATGATCTGGCCCACCA 1201
                                                                          544 CATGAATCTGTGTTGGAATGAAATAAAAAAAGTCTCACAACTCCGCGCTCGCCTAGA 603
                                                                                                                                                                                                                           604 gelerrericaeakeakeakaragaakeerrekeereererrekaakaarrakrasaerigeer 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             724 GCAACAGGAGAAGGAGACATGCGGCCTTTATGGAAGAAGTCAAGTCTCGGGGCCCCCTA 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 784 cárchantorierechegásordasendasecrinocriendesegéadonninasesen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          844 AdAGGAGCCTCATTCTGAGAGCAAAGATACCTCCCCGAAACAGGGGATCCAGAATCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               904 ccecrrireraricandecadecadescences of ccecrrirera de contra de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1627 AATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1867 GGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1024 G--CATGGAGGAACTAAGCACTACTCTGAGCCAAGCTGAGGGAGTCCGAGCCACTTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1082 GCCCATTGGGGATCTCTTCATTGATTCACTCCAGAGCACATCCAGGCTATTAAGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1987 TCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                        664 cacccanancantencacritercacricacrececrineacaccedangianicar
                                                                                                                                                        1447 AGCCAGTICTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2047 GCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1202 ACTIGCCALITICIGARGIGCACTIGICAALGGAGAATICCCAGGCCCTGGAACA 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5. Application US/09091501B
; Patent No. 6518413
; GENERAL INFORMATION:
; APPLICANT: Tinsley, Jonathon M
; APPLICANT: Davies, Kay E
; TITLE OF INVENTION: Utrophin gene expression
; TITLE OF INVENTION: Utrophin gene expression
; TITLE REFERENCE: 620-42
; CURRENT APPLICATION NUMBER: US/09/091,501B
; CURRENT PILING DATE: 1998-06-18
; PRIOR FILING DATE: 1996-12-19
; PRIOR FILING DATE: 1996-12-19
; PRIOR REPLICATION NUMBER: GB 9525962.8
; PRIOR PELLING DATE: 1996-07-26
; PRIOR FILING DATE: 1996-07-26
; NUMBER OF SEQ ID NOS: 15
; SEQ ID NO 5
; LENGTH: 200
; TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JS-09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1807
                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     白
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                    ò
                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Furness, Michael
APPLICANT: Furness, Michael
APPLICANT: Buchbinder, Jenny
TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
TITLE OF INVENTION: DATE: 2001-10-12
CURRENT PILING DATE: 2001-10-12
PRIOR FILLING DATE: 2000-1143
SOFTWARE: PERL PROGRAM
SEQ ID NOS: 1143
SEQ ID NOS: 1143
LENGTH: 3915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1063
                                                                                                                                                                                                                                                                                                                                                                                            1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1754 ATGAAGAGGCAGACTCTGGATCAACTGAGTGAGATTGGCCAAGGATGTGGGCCAATTACTC 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                      1274 circchichananachicricadachicricanachicachachachananachir 1333
                                                                                                                                                                                                                               .334 CAGAAGATGGAGAGCCCTCCGCTGGGTGATGACCTGCCCTCCTGCAGAAGCTGCTTCAA 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1814 AGTAATCCCAAGGCATCTAAGAAGATGAACAGTGACTCTGAGGAGCTAACACAGAGATGG 1873
                                                                                                                                                                                                                                                                                                             643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACATGGTGGTGATTGTGGATGAAACAGTGGGGAGAGTGCCACAGCTCTTCTGGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .634 GAGGCTTGGCTCACCGAAAAGGAAGGCTTTGAATAAAGTTCAAAACCAGCAACTTTAAA
CTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAAGAAGAAGAACA
                                                                                                                                                                                                                                                                                                             CAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACT
                                                                                                                                                                                                                                                                                                                                                                                        GAACATAAAAGTTTGCAAAATGACCTTGAAGCTGAACAGGTGAAGGTAAATTCCTTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1514 chgrinchdanacroccichaccocrochachachachachachachachachachach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    764 GITCITITACAAGACAICCITCICAAAIGGCAACGICITACIGAAGAACAGIGCCITITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1574 AACAGGTTGCAAGAATCAGTATTCTGTGGCAGGAATTATTGGAAGAGCAGTGTTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         824 AGTGCATGGCTTTCAGAAAAAAAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAAGCGGATCTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAAAAAGCAATCCATGGGCAAACTGTATTCACTCAAACAAGATCTTTCAACACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1004 AAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGG
                                                                                                                                                        AGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
(1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 3915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATAATTTAGTCCAAAACTTGAAAAGAGTACAGCACAG 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1874 GATTCTCTGGTTCAGAGACTCGAAGACTCTTCTAACCAG 1912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
9.6%; Score 200.8; DB 4;
Best Local Similarity 56.0%; Pred. No. 1.2e-50;
Matches 400; Conservative 0; Mismatches 312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
OTHER INFORMATĪON: Incyte ID No. 6673549 290344.1
-09-976-594-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 93, Application US/09976594
Patent No. 6673549
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8-09-976-594-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1064 (
                                                                                                                                                        524
                                                                                                                                                                                                                                                                                                             584
                                                                                                                                                                                                                                                                                                                                                                                            1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               704
```

```
US-08-232-463-14/c
JS-09-091-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                     625 CAGGGTCAATTCTCACTCACTCACAGGGGGTGGTAGTTGATGAATCTAGTGGAGATCACGC 684
                                                                                                                                                                                                                                                                                                                    76 GAAGGIGAATICCTIAACTCATAIGGIGATIGHGGATGAAAAAAAGTGGGGAGAGGGC 135
                                                                                                                                                                                                                                                                                                                                                                                                                   136 CACAGCTGTTTTGGAAGATCAGTTACAGAAACTGGGTGAGCGCTGGACAGCTGTATGCCG 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           553 TGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGA 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       673 TGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC 732
                                                                                                                                                                                                                                                                                                                                                                     685 AACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAG 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 124 Tedegagagreccacaetrerreregaagarcagrracagaakeregeregeeregeeregae 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 reaccieccorecerecaseascrecircaasaacaraaraaasaarrigeaaaardacerrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        613 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAATCTAG
                                                                                                                                                                        565 CCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAAGA
                                                                                                                                                                                                                    16 ccrecaaaaccrecrreaagaacaraaagrrrecaagreacresaagcagr
                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                     3.8%; Score 79.4; DB 4; Length 200;
64.3%; Pred. No. 2.4e-14;
tive 0; Mismatches 66; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 78.6; DB 4; Length 200;
Pred. No. 4.2e-14;
0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/09091501B
Patent No. 651843
GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Taxies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT PILING DATE: 1998-06-18
PRIOR APPLICATION NUMBER: QF 9525962.8
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR PELING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     733 AAACAICIGIAGAIGGA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184 AGCTGTATGCCGCTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative C
                                                                                               Best Local Similarity 64.3
Matches 119; Conservative
; ORGANISM: Rattus sp
JS-09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     745 ATGGA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 196 CTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: MUS Sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JS-09-091-501B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JS-09-091-501B-4
                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                        ⋩
                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                   ፉ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ď
```

RESULT 10

```
672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 TGGTGAGAGCGCTACAGCTATCCTAGAAGACCAGTTACAGAACTTGGTGAGCGCTGGAC 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   553 TGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64 GGCTGAACAGGTGAAAGTAAATTCACTAACTCACATGGTGGTCATTGTTGATGAAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
COMPATION SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: SCHEIFLINGER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: SCHEIFLINGER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS:
ADDRESSEE: 701e9 & Lardner
STREET: 1800 Diagonal Road, Suite 500
CITY: Alexandria
STREET: 0299
CONTRY: USA
ZIP: 2213-0299
CONTRY: READABLE FORM:
MEDIUM IYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 78.6; DB 4;
Pred. No. 4.2e-14;
0; Mismatches 74;
Sequence 6, Application US/09091501B
Patent No. 651813
GENERAL INFORMATION:
APPLICANT: Tinaley, Jonathon M
APPLICANT: Tinaley, Jonathon M
APPLICANT: Davies, Kay E
ITLE 0P INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION UNDERS: US/09/091,501B
CURRENT PILING DATE: 1998-06-18
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR PILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-10-24
PRIOR PILING DATE: 1996-10-24
SOFTWARE: PATENTION NUMBER: GB 9622174.2
SOFTWARE: PATENTIN VON 15
SOFTWARE: PATENTIN VON 15
SOFTWARE: PATENTIN VON 15
SEQ ID NOS: 15
SEQ ID NOS: 15
SEQ ID NOS: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 14, Application US/08232463 Patent No. 5670367 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           184 AGCAGTATGCCGTTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      733 AAACATCTGTAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
, ORGANISM: Homo sapiens
US-09-091-5018-6
```

```
1348 TTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGA 1407
                                                                                                                                                                                                                                                                                     169 TTCGGACGACGCAGTACTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGA 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | :| :: :: :: :: | | :: :: | | 387 GSWGGYRWWGRGWAAKMRAAAGGSYCGMTSYTGGSKMTGRKGSMTKRKRWMTY 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        319 AAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCA 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   445 AATYAACRWAWAWGAGAAWKRWKWAGSMRACARAGTTMAWGACWAMARRGWRCARGR--T 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       327 SGMWWISYKCIKIGKKYIGWKSKKIRWICISWKKYMWMSGCWARSMKSWARSWYSMAAC 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           499 GCTAACAAAAACAGAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCT 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 207 RMCRRWMWSCRRMSYSCMGSKCMSCRGTCAKOWRYARYAKRYASSMGKYWMGCRWCYAKC 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 439 CAATITACATAGAGTITITAATGGAICTCCCAGAATCAGAAACTGAAAGAGTTGAATGACTG 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        559 IGAAGACCIAAAACGCCAAGIACAACAACAIAAAGGIGCTICAAGAAGAICTAGAACAAGA 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2; Gaps
                                                                                                                                                                                           .
0
                                                                                                                                         Length 238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                           4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Jobert, S. PEPLICANT: Glordano, J.Y. TITLE OF INVENTION: ESTS and Encoded Human Proteins. FILE SPERRNCE: GENERY. 1054FR2. CURRENT APPLICATION NUMBER: US/09/621,976 NUMBER FILING DATE: 2000-07-21 NUMBER: OS SEQ ID NOS: 19335 SOFTWARE: Patent.pm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
2.2%; Score 46.2; DB 4; I
Best Local Similarity 17.4%; Pred. No. 0.00067;
Matches 54; Conservative 131; Mismatches 124;
                                                                                                                                         Score 63.6; DB 4;
Pred. No. 1.9e-09;
0; Mismatches 4;
                      ORGANISM: Artificial Sequence
FEATURE:
CTHER INFORMATION: pXX-C2 5' junction
US-09-687-875A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 15639, Application US/09621976 Patent No. 6639063 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Dumas Milne Edwards, J.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09198452A; Patent No. 6559294; GENERAL INFORMATION:
                                                                                                                                           Query Match
Best Local Similarity 94.3%;
Matches 66; Conservative
                                                                                                                                                                                                                                                                                                                                    1408 ACTTCGGAAA 1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | : |:::::
147 ARMYGYYRSRS 137
                                                                                                                                                                                                                                                                                                                                                                               229 ACTICGGAAA 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-621-976-15639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JS-09-621-976-15639/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
US-09-198-452A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 15639
                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pacience 13, Application US/096875A
Patent No. 6544786
GENERAL INFORMATION:
APPLICANT: Alao, Xiao,
APPLICANT: Liu, Paul
TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED PEPLIE OF INVENTION NUMBER: US/09/687,875A
CURRENT APPLICATION NUMBER: US/09/687,875A
CURRENT APPLICATION NUMBER: 60/158,868
PRIOR PLING DATE: 1999-10-15
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin version 3.1
LENGTH: 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        213 TITCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGG 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        273 ATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTG 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333 GAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAA 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              393 ATTCAAGATGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAG 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        453 ITTTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAG 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       513 AAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAC 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  573 GCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
3.6%; Score 76.6; DB 1;
Best Local Similarity 6.7%; Pred. No. 2.1e-12;
Matches 28; Conservative 236; Mismatches 155;
                                          FILING DATE:
APPLICATION NUMBER: EP 91 114 300.6
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET VUMBER: 30472/114 IMMU
TELECOMMUNICATION INFORMATION:
TELECHONE: (703)836-9300
                        APPLICATION NUMBER: US/07/935,313
                                                                                                                                                                                                                                                                             TELEX: 899149
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
                                                                                                                                                                                                                                     (703)836-9300
(703)683-4109
                                                                                                                                                                                                                                                                                                                                                                            nucleic acid
EDNESS: single
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLONE: pTZgpt-F1s
S-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMEDIATE SOURCE
                                                                                                                                                                                                                                                                                                                                                                               TYPE: nuclei
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ESULT 12
S-09-687-875A-13
                                                                                                                                                                                                                                                            TELEFAX:
```

```
NAME/KEY: misc_feature

COCATION: (310001)...(315000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (315001)...(33000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (345001)...(35000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (345001)...(35000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (345001)...(35000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (345001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(45000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (455001)...(55000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (555001)...(55000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (555001)...(55000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (555001)...(55000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (555001)...(55000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (555001)...(50000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (55001)...(50000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (55001)...(50000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

LOCATION: (55001)...(50000)

CTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WAME/KEY: misc_feature
LOCATION: (600001)..(615000)
OTHER INFORMATION: n=a or or g or
NAME/KEY: misc_feature
COCATION: (615001)..(630000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (64501)..(660000)

THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc feature
LOCATION: (630001)..(645000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
APPLICANT: Griffais, R.
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragmente
TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preve
TITLE OF INVENTION: and treatment of infection
FILE REPRENCE: 9710-003-999
CURRENT APPLICATION NUMBER: 05/09/198,452A
NUMBER OF SEQ ID NOS: 6849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WAME/KEY: misc feature
LOCATION: (90001)..(105000)
OTHER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc feature
LOCATION: (45001)..(60000)
OTHER INFORMATION: n=a or c or g or NAME/KEY: misc feature
LOCATION: (60001)..(75000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (105001)...(120000)
OTHER INPORMATION: n=a or c or g or
NAME/KEY: misc feature
LOCATION: (120001)...(135000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OMBANIA ARRANGE CERTURE
LOCATION: (30001)..(45000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
LOCATION: (150001)...(165000)
OTHER INFORMATION: n=a or c or g or
NAMEN/KEY: misc_feature
LOCATION: (165001)...(180000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (270001)...(285000)
OTHER INFORMATION: n=a or c or g or
MAME/KEY: misc feature
LOCATION: (285001)...(300000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
LOCATION: (1). (15000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (15001)..(30000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAWE/KEY: misc feature
LOCATION: (75001)..(90000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAWE/KEY: misc feature
LOCATION: (135001)..(150000)
DTHER INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                              ORGANISM: Chlamydia pneumoniae
                                                                                                                                                                                                             SEQ ID NO 1
LENGTH: 1230025
```

```
APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
2.1%; Score 43.4; DB 4; Length 1179;
Best Local Similarity 50.7%; Pred. No. 0.0087;
Matches 104; Conservative 0; Mismatches 101; Indels 0
                                                                                                                           NUMBER OF SEQUENCES: 7310
CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER:
PLING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 60/085,598
APPLICATION NUMBER: 60/051571
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
ATTORNEY/AGENT INFORMATION:
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 40,489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              );
NAME/KEY: misc feature
;
LOCATION: (B) LOCATION 1...1179
;
SEQUENCE DESCRIPTION: SEQ ID NO: 1186:
US-09-107-532A-1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  651 TGGTGGTAGTTGATGAATCTAGTGG 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        782 AATÍTGGGGÍCGGATTCACÍTCTGG 806
                                                                                                                                                                                                                                                                                                                                        ZIP: 02354
COMPUTER READABLE FORM:
MEDTUM TYPE: CD/ROM ISC9660
COMPUTER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                      STREET: 100'Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1179 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 1186:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                   CITY: Waltham
STATE: Massachusetts
COUNTRY: USA
            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            656477 AATTAGAAGAAAGAGAAGAAAGAGAAGAAATTGAGGATATCAAAGACTCAGATACAAAAT 656418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                342 AATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            656357 CAATTAAGCAGAAAAACTAAAAGCTTCTAAAGAGACGCGCGGGAAATAGA 656306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      462 ATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGA 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 2.1%; Score 44; DB 4; Length 1230025; Best Local Similarity 53.5%; Pred. No. 0.7; Matches 92; Conservative 0; Mismatches 80; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Misc feature

LOCATION: (180701)...(795000)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (795701)...(195000)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(825000)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(84000)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(85500)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(85500)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(88500)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(88500)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(88500)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature

LOCATION: (180701)...(88500)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (660001)..(675000)
OTHER INFORMATION: n=a or c or g or t
NAME/KRY: misc feature
LOCATION: (67501)..(690000)
OTHER INFORMATION: n=a or c or g or t
NAME/KRY: misc feature
LOCATION: (69001)..(705000)
OTHER INFORMATION: n=a or c or g or t
LOCATION: (67001)..(705000)
OTHER INFORMATION: n=a or c or g or t
LOCATION: (705001)..(700000)
OTHER INFORMATION: n=a or c or g or t
NAME/KRY: misc feature
LOCATION: (705001)..(720000)
OTHER INFORMATION: n=a or c or g or t
NAME/KRY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (735001)...(750000)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
LOCATION: (750001)...(765000)

OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
LOCATION: (765001)...(760000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature
LOCATION: (900001)..(915000)
OTHER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: (88501)..(900000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                              OCATION: (72001)..(735000)

THER INFORMATION: n=a or c or g or AME/KEY: misc_feature
```

```
602 AGCAAAGAATAAAAGATTTGATCGATCAGACAAAGAAAAATGGAGATACGATCGGAGGAA 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               531 TGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATA 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              591 AGGIGCTICAAGAAGAICTAGAACAAGAACAAGICAGGGTCAAITCTCTCACTCACAIGG 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      722 cdaadcingándccaáaaítcdcadaadcngngdinágnaítaángccnínáaaggcgiad 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               662 ingradaderecrecinde de estrecador de arribacia de ciacia de desentacia de esta de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search completed: April 5, 2004, 08:24:46
Job time : 116.891 secs
```

ESULT 15 S-09-107-532A-1186 Sequence 1186, Application US/09107532A Patent No. 6583275

Gaps

. 0

```
8 8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 27, Applisequence 27, Applisequence 28, Applisequence 34, Applisequence 29, Applisequence 35, Applisequence 42, Applisequence 42, Applisequence 43, Applisequence 44, Applisequence 47, Applisequence 22, Applisequence 22,
                                                                                                                                                                             April 5, 2004, 04:53:30 ; Search time 509.455 Seconds (without alignments) 15454.047 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                         US-09-845-416-2_COPY_900_3000
2101
1 gagctatgcctacacacagg.....acctcagcactctggaagac 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/DC7_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PC7_NEW_PUB.seq:*
3: /cgn2_6/ptodata/2/pubpna/PC7_NEW_PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
5: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
6: /cgn2_6/ptodata/2/pubpna/DS07_NEW_PUB.seq:*
7: /cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
8: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
9: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
14: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-845-416-27
US-09-845-416-27
US-09-845-416-28
US-09-845-416-34
US-09-845-416-34
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-10-149-736-4
US-10-149-736-4
US-10-149-736-4
US-10-149-736-4
US-10-149-736-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2470430 segs, 1873665578 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     st-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                        - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nimum DB seq length: 0 ximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .tle:
:rfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                     oring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2101
15799101
157991001
157991001
1644431
110031144433
11003144433
11003144433
11003144433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                        f nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tabase :
                                                                                                                                                                                                                                                                                                                                                                               squence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  arched:
                                                                                                                                                                                       on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sult
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1432110987654321
                                                                                                                                                                                       អ្ន
```

Sequence 1284, App Sequence 1, Appli Sequence 434, App Sequence 108, Appli Sequence 14, Appli Sequence 14, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 12, Appli Sequence 12, Appli Sequence 13, Appli Sequence 13, Appli Sequence 13, Appli Sequence 23, Appli Sequence 23, Appli Sequence 23, Appli Sequence 31, Appli Sequence 67, Appli Sequence 67, Appli Sequence 11, Appli Appli Sequence 11, Appli Sequence 11, Appli Ap	Sequence 33, Appl
US-09-880-107-2284 US-10-149-736-1 US-10-342-887-4334 US-10-341-434-108 US-09-845-416-14 US-09-845-416-14 US-09-845-416-14 US-09-845-416-14 US-09-845-416-14 US-09-845-416-12 US-09-845-416-12 US-09-845-416-12 US-09-845-416-12 US-09-845-416-13 US-09-845-416-13 US-09-845-416-13 US-09-845-416-13 US-09-845-416-13 US-09-845-416-13 US-09-845-416-13 US-10-149-736-31	US-10-149-736-33
9 1000000000000000000000000000000000000	12
13957 13957 14062 14062 11062 11091 1291 1391 1391 1381 1382 1387 10302 10302 10302 10302 10303	324
20202020204444448688291111111111111111111111111111111111	
11103.4 11103.4 11103.4 11103.4 1103.4 1103.4 1003.	261
9 1 1 1 1 1 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2	45

ALIGNMENTS

Sequence 2, Appl Sequence 2, Appl Publication No. GENERAL INFORMATION NO.	Sout 1 109-845-416-2 Sequence 2, Application US/09845416 Publication No. US20030171312A1 GREREAL INFORMATION TO USA
TITLE OF	AFFILE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: THEREOF PRICE PROPERTY. THEREOF
CURRENT A	FILE REFERENCE: DELINE CURRENT APPLICE: DELINE THREENT FILING DATE: 2001-04-30
PRIOR API	PRIOR APPLICATION NUMBER: 60/200,777
NUMBER OF	SEQ ID NOS: 36
SOFTWARE:	PatentIn Ver. 2.1
LENGTH:	4182
IIFE: DNA ORGANISM: H S-09-845-416-2	DRGANISM: Homo sapiens 9-845-416-2
Query Match	100.0%; Score 210.
Matches 2101;	Conservative 0;
λ _τ	1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60
و ع(900 GAGCTATGCCTACACACACGCTGCTTATGTCACCACTCTGACCCTACACGGAGCCCATT 959
Ž.	61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGA 120
)6 q	960 TCTTCACAGCATTTGGAAGCTCCTGAAGACACACATTTGGCAGTTCATTGATGGAGAG 1019
γ 13	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTC 180
ib 1020	0 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGGTTCTTTC 1079
1 16	181 IGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240

1921 CGAAAAATCCCGAAACTCCCGAAAGTTCCCCGATTATCACACCTGGATGAAACAGG 2219 2220 CCAAAAATCCTGAAATCCCGAAAAGTTCCGAAAAATCCGATGAACTCCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCGAAAAAGTTCCTCGAAAAAAGTTCCTCAACTTTCACCGGAAAAGTTCCTCCGAAAAAGTTCCTCAACTTTAGAACCCTTCTACCTCCAACTTTAGAACCCATTCTAGAACTCCTCAACTTTCACTTCCCCCGAAAAAGTTCCTCCAACTTTCAACTTCCAACTTCAACATCAAAAAATTAACCCGAAAAAGTTCTCTCTC	C 21 C 30 C 30 C 30 C 30 C 30 C 30 C 30 C 30
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Post of the second of the seco
·	
10.00 TGCTGAGGACACATTGCAAGCACAAGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA 1139 114.0 CCAGTTTCATACTCAGGAGGACACATCAGAGACACACACA	1021 CCAGAAGACGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA

us-09-845-416-2_copy_900_3000.rnpb

SOF	SOFTWARE: Patentin Ver. 2.1	qq	2557 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 2616
25. 12. 13. 14. 15. 16. 16. 16. 16. 16. 16. 16. 16. 16. 16	5149	y y	961 GGGCAAACTGTATCACTCAAACAACTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
S-09-8	ens	8 &	
Quer Best Matc]	Ouery March Best Local Similarity 100.0%; Pred. No. 0; Matches 2101; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	qQ	
2 ح	CTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACG	S G	1081 ACTTGAAAGGGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCTGGACCTGGA 1140
a >- a	TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTGGCAGTTCATTGATGGAGGCCATT	cy G	1141 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC 1200
o >- 1		ъ д В	1201 CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA 1260
) b. (TGCTGAGGACACATTGCAAGGAGAGATTTCTAATGATGTGGAAGGAGAAAGA	\$ g	1261 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG 1320
n 5. (661166 	\$ q	1321 CCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 1380
n 5- (CASIIICAIACICAIGAGGGGAACAIGAIGGAIIGGAAIIGACACCCCCCCC	<u>ک</u> ۾	1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1440
	PARTAILCIACARIIGGGARGIANGCIGAIIGGARACAGGARACIAICACARAGA AACTGAAGTACACAAAATTCAAGATGGGAATGCCTCAGGGTAGC	\$ g	1441 TITGGAAGCCAGITCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 1500
o 5- 1	AACTGAAGGAAAAACAAAGGAATTTACATATTTAAATGGGAACTCCCAGAATCAGAAACTTTAAATGGAATCTCCCAGAATCAGAAACTTTACATGGAATTTTAAATGGATCTCCCAGAATCAGAAACTTTTAAATGGAATCTCCAGAATCAGAAACTTTTAAATGGATCTCCAGAATCAGAAAACTTTTTAAATGGATCTCCAGAATCAGAAAACTTTTTAAATGGATCTCTCAAAACTTTTTTTT	ò a	1501 GTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTCTTTGGAGGCGACTTTCC 1560
ם איר מ	IASCATOSRAPARACARAGOCATITIACATASRAGITITAATOSATOTOCAGARATORAGARACA GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA 	oy Q	1561 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA 1620
ם אי מ	213 / GARAGAGTIGARIGACTGGCTARCAGARAGARAGARACAAGGARAATGGAGGARAGA 2198 541 GCCTCTTGGARCTTGAAGACCTAAAAGGCCAAGTACAACAACAAAAAGGTGCTTCA 600 2107	ζό Cp	1621 ACCIGIAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 1680
א א כ	SCLICITES SANCE SALE LE SARGECE TANNESSE CANOLINE CANCELLA CANCELL	, 60 G	1681 AGGACTAGAGAAACTCTACCAGGAGCCCAGAGACTGCCTCGTGAGGAGAGGCCCAGAA 1740
א א נ	TATTGGG	y da	1741 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAA 1800
a >- c	AGATCGATGGGCAAACATCTGTAGATGGACGGCTTGGGATGGTTCTTTTACAAGACATCATGTGGGCTATTTTACAAGACATCATTTTACAAGACATCATTTTACAAGACATCATTTTACAAGACATACAT	Oy Op	
n >- Ω	781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 437 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCAATGGCTTTCAGA	o d	TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC [
> A	841 AAAAGAAGATGCAGTGAACAAGATTCACAACAACTGGCTTTAAAGAATGAAAATGAAATGTT 900 	oy Q	CTGGCAGCCCGTGGGGGATCTCCTATTGATTCTCCAAAATCACCTCGGGAAAGTCAA 196
>		Oy Dp	1981 GGACTTCGAGAGAAATTGGGCCTTTGAAAGAACGTGAGCCAGGTCAATGACTTGC 2040

720

1679

780

1727

900

840

```
1728 gactertactictegregacaca-----accretegraataataagaaacreccater- 1777
1440 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1499
                                                                                                                                                                                      CGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATAGACA
                                                                                                                                   1560 reargaarcrasseastcacscaacrestscrassaasaasaacaacrraassrafisse
                                                                                                                                                                                                                                                                    1680 GCCTGAC------CTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCA
                                                                                                                                                                                                                                                                                                         841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                              961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1141 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1857 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2097 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGGAATTGAAAAACTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Accretaarcargagracrerrgagacreracgaararrirergacagagagacarrigga
                                                    721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT
                                                                                                                                                                                                                                     781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                         901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081 ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAAGAGCTGATGAAACAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1977 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITGGAAGCCAGITCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  trregaagecagricigaccagregaagegrerecactriciterecagaageri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAAGCCGACTTTCC
                                  TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAAAAATCCTGAAATCCCTGGAAGGTTCCGATGATGATGCAGTCCTGTTACAAAGACGTTT
                                                                                                                                                                                                                                                                                                                                                                                                               1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---ccaaactagaatgccatcttccttgatgttggag-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1501
                                  601
                                                                                                    661
                                                                                                                                                                                                                              8 6 8 6 8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 6
                                8 6
                                                                                                ઠે
                                                                                                                          g
                                                                                                                                                           8
                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ccaertricatacrcardaggegracargaregarrigacaecccarcaggegegegerieg 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1259
                                                 3697 rescenserraceaerrressearresserereaegraraacereaesereresseaen 3756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAGGTGCTTCA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tecreageacacarrecaageacacaageagagarrrrcraargargreggaagregaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          900 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rccrrcacaccarrragaagcrccrgaagacaagrcarrragcagrrcarragagaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .020 IGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATATTTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCATGGAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72; Indels 183; Gaps
                                                                                                                                                                                                                                                                            USE
                                                                                                                                                                                                                                                    APPLICANT: XIAO
APPLICANT: XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND U
TITLE OF INVENTION: THEREOF
TITLE OF INVENTION: THEREOF
CURENT APPLICATION NUMBER: US/09/845,416
CURENT APPLICATION NUMBER: 06/200,777
PRIOR PILING DATE: 2001-04-30
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: PATENTIN VOET: 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 10; Length 3999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 75.2%; Score 1579.8; Best Local Similarity 87.9%; Pred. No. 0; Matches 1846; Conservative 0; Mismatches
                                                                                                                                                                                                      Sequence 6, Application US/09845416 Publication No. US20030171312A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 3999
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                  C 2101
                                                                                                                    ¢ 3757
                                                                                                                                                                       ESULT 3
S-09-845-416-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S-09-845-416-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , 096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  547
                    2041
                                                                                     2101
                                                                                                                    3757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
```

1140

1812

1080

1777 1020 1200 1916 1260 1976 1320 2036 1380 2096 1440 1500 2216 1560 2276 1620

2156

1681 AGAICTIGGGAAACTCTACCAGGGACCCGGGGACCCCCCGGAAACTCGAAACTCTACCGGAAACTCCACCCGGAAACTCGAAACTCCACCCGGAAACTCGAAACTCCACCCCGGAACACCCCCGGAGGACCTCACCCCCGGAGGACCTCACCCCCGGAGGACCTCACCCCCGGAGGACCTCACCCCCGGAGGACCTCACCCCGGAGGACCTCACCCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGCACCCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCCGGAGGACCTCACCGGAGGACCTCACCGGAGGACCTCACCGGAGGACCTCACCGGAGGACCTCCACCACCCTCACCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGACCTCCCGGAGGAACTCCCCCCGGAGGACCTCCCGGAGGAACTCCACCCTCACCGGACCCTCCGGAGGAACTCCCCCCCGGAGGAACCCTCCCGGAGGAACCTCCCCCGGAGGAACCTCCCCCGGAGGAACCCTCCCGGAGGAACCTCCCCGGAGGAACCCTCCGGAGGAACCCTCCGGAGGAACCCTCCGAGGAACCCTCCGAGGAACCCTCCGAGGAACCCTCCGAGGAACCCTCCGAGGAACCCTCCACCCCCCCC

Ą.

>

≿:

```
1740
                                                                                                                                                                                                                                                     1800
                                                                                                                                                                                                                                                                                                                  1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2558
                                                                                                                                                                                                                                                                                                                                                                                  1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2508
                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                             GAGCTATGCCTACACACACACGCTTATGTCACCACCACTCTGACCTACACAGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                       TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                       recrireacadeartriggaagerecrigaagacaagrearriggeagricarrigariggagag
                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                     TGCTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                               ccaerrrcaractcargaggggacargarggarrrgacaggccarcaggccgggrrgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATATICTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAGAGTIGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2461 GCCTGAC-------CTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT
                                                                                                                                                           GAGCTATGCCTACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                       TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGITITCATACICAIGAGGGGIACAIGAIGGAITIIGACAGCCCAICAGGGCCGGGIIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATICTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGACCA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACTGTTACTCTGGTGACACA-----ACCTGTGGTTACTAAGGAAACTGCCATCT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                          Indels 183; Gaps
                                                                                            Length 4990;
                                                                                             DB 10;
                                                                                                                          72;
                                                                                            Score 1579.8;
Pred. No. 0;
0; Mismatches
                                                                                             Query Match
Best Local Similarity 87.9%;
Matches 1846; Conservative
; SEQ ID NO 34
; LENGTH: 4990
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-845-416-34
                                                                                                                                                                                                                                                          1741
                                                                                                                                                                                                                                                                                                                      1801
                                                                                                                                                                                                                                                                                                                                                                                     1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                      d
                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                       \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2040
                                                                                                                                                                                                                                                                                                                                     1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1860
                                                                                                                                             1500
                                                                                                                                                                                                          1560
                                                                                                                                                                                                                                                                                                                                                                                                                                     3213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2100
                                                                                                             2913
                                                                                                                                                                                                                                         3033
                                                                                                                                                                                                                                                                                                        3093
                                                                                                                                                                                                                                                                                                                                                                       3153
                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAAGCCCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAGGTCAAGGATC
                                            ccaaaaaarccrgaagarcccrggaaggrrccgargargcagrccrgrracaagacgrrr
                                                                                                  GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCACATTAGGTCCCA
                                                                                                                                             TITGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT
                                                                                                                                                                TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGGT
                                                                                                                                                                                                          GTGGCTACAGCTGAAAGATGATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCC
                                                                                                                                                                                                                                                                                           AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGGAATTGAAAACTAAAAGA
                                                                                                                                                                                                                                                                                                                                       ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                    accrerantearcardacrerrendadereranceantarrrendadadeageagecrrrega
                                                                                                                                                                                                                                                                                                                                                                                                        AGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGGCCCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ccrecacrececreacrescagasaaaragareacecrreaaagacrecaggaacr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCAGCCCGTGGGCGATCTCCTCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            crescascoccidescoarcrecrearreacrerecasaarcacereagaasteaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCACITICGAGGAGAATIGGGCCTCTGAAAGAGAAGAGGCGIGAGCCACGICAAIGACCTIGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCCAGCACTCTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGGACTCTGGAAGA
                                                                                                                                                                                                                                                                         <u>AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 34, Application US/09845416
Sequence 34, Application US/09845416
GENERAL INFORMATION:
APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT PILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR PLING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JS-09-845-416-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -ပ
                                                                                                                                                                                                                                       2974
                                                                                                                                                                                                                                                                                                        3034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3514
                                            2794
                                                                                                             2854
                                                                                                                                                                          2914
                                                                                                                                                                                                                                                                                                                                                                       3094
                                                                                                                                                                                                                                                                                                                                                                                                      1681
                                                                                                                                                                                                                                                                                                                                                                                                                                     3154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2101
                                                                                                                                           1441
                                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                                                                                       1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3574
                                                                                1381
                                                                                                                                                                                                          1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1981
```

QY 2041 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 2100 Db 3538 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 3597 QY 2101 C 2101 Db 3598 C 3598	RESULT 6 US-09-885-416-9 ; Sequence 9, Application US/09845416 ; Publication No. US20030171312A1 ; GENERAL INPORMATION: ; APPLICANT: XIAO, XIAO ; TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	; TITLE OF INVENTION: THEREOF; FILE REPERENCE: DE1142 ; CURRENT PEPLICATION UNMBER: US/09/845,416 ; CURRENT PILING DATE: 2001-04-30 ; PRIOR APPLICATION NUMBER: 60/200,777 ; PRIOR PILING DATE: 2000-04-28 ; NUMBER OF SEQ ID NOS: 36 ; SOFFWARE: PALCHIN UVEY. 2.1	; SEQ ID NO 9 ; LENGTH: 3858 ; TYPE: DNA ; CRGANISM: Homo sapiens US-09-845-416-9	Query Match 68.7%; Score 1443; DB 10; Length 3858; Best Local Similarity 84.6%; Pred. No. 0; Matches 1777; Conservative 0; Mismatches 0; Indels 324; Gaps 1;	Qy 1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACTCTGACCTACACGGAGCCCATT 60	Db 960 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGAGGGGGGG 1019 Qy	181	QY 241 CCAGITICATACICATGAGGGTACATGATTTGACAGCCCATCAGGGCCGGGTIGG 300	Cy 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAGATGAAGA 360	QY 361 PACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 1260 PACTGAAGTACAAGAAGAATGAATCTCCTAAATTCAAGAATGCCTCAGGGTAGC 1319	Qy 421 TAGCATGGAAAACAAAGGAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480	OY 481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAGAACAAGGAAAATGGAGGAAGA 540	Oy 541 GCCCCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA 600
961 GGGCAAACTGTATTCACTCAACAAGATCTTTTTAACACTGAAGAATAAGTCAGTGAC 1020 2559	1081 ACTTGAAAAGAGTACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 1140 2594GTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 2637 1141 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCATGTCCTACAGGATGCTAC 1200 2638 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC 2697		CCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 	1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1440 2878 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCA 2937 1441 TTTTGGAAGTCGAGTTCAAGTGGAGTGAACTTTCGGAAAAAGTCTTCCAACATTAGGTCCA 2937	TTTGGAAGCCAGTTCTGACCAGTGGAAGGGTCTGCACCTTTCTGCAGGAACTTCTGGTGTTGGAAGCGTCTGCACCTTTTCTGCAGGAACTTCTGGTGTTACACCTTTTCTGGTTGGAAGCGACAGCACCTTTTCTGGTTGGAAGCGACACCTTTTCCTGGTTTTCCTTTTCTTTTCTTTTCTTTTCTTC		TTTGGA TTTGGA	AGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAA -	1741 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGTCAATACTGACTG			CTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCCCAGGATCACCTCGAGAAGTCAA	1981 GGCACTTGGAGGAGAATTGCGCCTCTGAAAGGAACGTGAGCAGGTCAATGACCTTGC 2040

OY 1681 AGGACTAGAGAACTCTACCAGGAGCTGCCTCCTGAGGAGAGAGA	OY 1981 GGCACTTCGAGGAGAATTGCGCCTCTGAAGAGAACGTGAGCCACGTCAATGACCTTGC 2040 Db 2556 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAAACGTGAGCCACGTCAATGACCTTGC 2615 Qy 2041 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 2100 Db 2616 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACTCTGGAAGA 2675 Qy 2101 C 2101 Db 2676 C 2676	RESULT 7 US-09-845-416-29 i Generace 29, Application US/0984516 j Publication No. US20030171312A1 i GENERAL INFORMATION: j APPLICANT: XIAO i TITLE OF INVENTION: TITLE OF INVENTION: TITLE OF INVENTION: FILE REFERENCE: DEL142 CURRENT APPLICATION NUMBER: US/09/845,416 j CURRENT PILING DATE: 2001-04-30 j PRIOR PILING DATE: 2000-04-28 i NUMBER OF SEQ ID NOS: 36 j SOFTWARE PATENTIN VET: 2.1 j SEQ ID NO 29 LENGTH: 4825 j TYPE: DNA CREANISM: Homo sapiens US-09-845-416-29	Query Match 68.7%; Score 1443; DB 10; Length 4825; Best Local Similarity 84.6%; Pred. No. 0; No. 0; Indels 324; Gaps 1; Matches 1777; Conservative 0; Mismatches 0; Indels 324; Gaps 1; Qy 1 GAGCTATGCCTACACACACACACACACACACACACACACA
AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT 960 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080	CCTGGA CTGGGA TGCTAC TGCTAC TGCTAC ATGGCA ATGGCA AAACAG AAACAG AAACAG	GGATAACATGAACTTCAAGTGGAACTTCGGAAAAACTCTCTCAACATTAGGTCCCA 1410

QY 1321 CCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCCGTTACAAAGACGTTT 1380	Qy 1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCA 1440	QY 1441 TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 1500 Db 2773 TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 2832	OY 1501 GTGGCTACAGCTGAAAGATGAATAAAGCCGGCAGGCAGCCCTATTGGAGGGGACTTTCC 1560 2833 GTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA	CY 1561 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGA 1620 Db 2893 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGGAATTGAAAACTAAAGA 2952	QY 1621 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 1680 2953 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 3012		OY 1741 TGTCACTGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGGGAAAAATTGAA 1800 101	Qy 1801 CCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT 1860 1333 CCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT 1860	Qy 1861 TCAAGAGCCA.CGATGAGCTGCACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 1920 Db 3193 TCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 3252	Qy 1921 CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAA 1980	Qy 1981 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC 2040	OY 2041 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGCACTCTGGAAGA 2100	Qy 2101 C 2101 		RESULT 8 US-09-845-416-35 Sequence 35, Application US/09845416 Publication No HRS00011713121	GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: DAY SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	; TILE REPERENCE: DE1142 ; CURRENT APPLICATION NUMBER: US/09/845,416 ; CURRENT FILING DATE: 2001-04-30	FALOK AFFLICHION NOMERS: 00/200,/// FRICK FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFWARE: Patentin Ver. 2.1 SEQ ID NO 35
CAGTITCATACTCATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG 30	CCAGIIICAIACICAIGAGGGGIACAIGAIGGAIIGGAATIICAGGGCCCGGGGIIGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 	PARTALICIACARTIGGGRAGIANGCIGATIGGBARCAGGRAAAATIATCAGAAAGATGAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAA	2017 AACTGAASTACAAGAGCAGATGTCTCCTAAATTCAGGATGGGGGAATGCCTCAGGGGTAGC 2078 421 TAGCATGGAAAACAAAGGAATTTACATAGAGTTTTAATGGATCTCCAGAAACT 480 2077 TAGCATGGAAAACAAAGCAATTTACATAGATTTTAATGGATCTCCAGAATCAGAAACT 136	GAAAGAGTTGAATGACTGCCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 	GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAGTACAACAACATAAGGGCCTTCA	AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	TGATGAATCTAGTGGAGATCACGCAACTGCTGCTGTTGGAAAAAAAA	AGATCGATGGGCAAACATCTGTAGATGGACGGAGGCCGCTGGGTTCTTTTACAAGACAT	CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA	AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT	ATCAAGTCTTGAAAAACTGGGCGTTTTAAAAGGGGATCTAGAAAAAAAA	GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 102	2435	2435 2434	1081 ACTTGAAAAGAGTACACACACACACATACTGCAACAGTTCCCCCTGGACCTGGA 1140 	1141 AAAGTITCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCCAATGTCCTACAGGATGCTAC 1200	1201 CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGAGTAAAAGAGCTGATGAAACAATGGCA 1260	1261 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG 1320

961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020	CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA		1081 ACTIGAAAGAGTACAGACTCATAGATTACTGCAACAGTTCCCCTGGACTGGA 1140	AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCCAATGTCCTACAGGATGCTAC	AAAGTTTCTTGCCTGGCTTACAGAAGCTGAACAACTGCCAATGTCCTACAGGATGCTAC	1201 CCGTARGGGAARGGGTCCTAGAAGAACTCCAAGGGAGTAAAAGAGGTGAAAGGGAGTAAAAGAGGTGAAAGGGAA 1200 2556 CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA 2615	1261 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG 1320 	1321 CCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 1380	1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1440		Independent Independent	GTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCC	1561 AGCAGIICAGAAGCAGCAGIGTACAIAGGGCCIICAAGAGGGAAIIGAAAACIAAAGA 1620 	1621 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 1680 	1681 AGGACTAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAA 1740 	1741 TGTCACTCGGCTTCTACGAAAGCAGCTGAGAGGACGTCAATACTGAGTGGGAAAAATTGAA 1800 			1861 TCAAGAGGCCACGGATGAGCTGCACCTCAAGCTGCGCCAAGCTGAGGTACAAGGGATC 1920		CTGGCAGCCCGTGGGGCTCCCCTCATTGACTCTCCCAAGATCACCTCGAGAAAAGAAAAAAAA	1981 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGAG	2041 TCGCCAGCTTACCACTTTGGCCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 2100
ે દ	8 8	전	රු දි	8 8	ପ୍ର ପ୍ର	<u>8</u>	<i>≿</i> 8	8 8	& 8	ठे ह	3 &	qq	ž a	δ _γ	& A	8	ò	qq	දු පු	λ ₀ :	a	S 8	ò
LENGTH: 4848 TYPE: DNA ODDANIEN: Home carriers	4	Query Match 68.7%; Score 1443; DB 10; Length 4848; Best Local Similarity 84.6%; Fred. No. 0; Matches 1777; Conservative 0; Mismatches 0; Indels 324; Gaps 1;		b 1680 GAGCTATGCCTACACAGGCTGCTTATGTCACCTCTGACCCTACAGGAGCCCATT 1739 v 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTGGCAGTTCATTGATGAAGA 120	1740 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAAGAGAG	y 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTC 180	181 TGCTGAGGACACATTGCAAGCACAAGAGAGAATTTCTAATGATGGAGGAGTGAAAGA	1860 TGCTGAGGACACATTGCAAGGAGAGATTTCTAATGATGTGGGAAGTGGTGAAAGA 241 CCAGTTTCATACTCATGAGGGGTACATGATGATGGATTTGACAGCCCATCAGGGCCGGGTTTGG	b 1920 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1979 Y 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAAGAAAATTATCAGAAGATGAAGA 360	b 1980 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA 2039 y 361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420	2040 AACTGAAGTACAAGAAGAAGAATCTCCTAAATTCAAGAATGGGAATGCCTCAGGGAAG	y 421 FACCATGGAARACAATTTACATTAATTGATTTAATGATTCTCAAATCAGAACT 480 b 2100 TAGCATGGAAAAACAAAGCAATTTAACATGAATCTCCAGAATCAGAAACT 2159 b 2100 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 2159	y 481 GAAAGAGTTGAATGACTAACAAAACAGAAGAAAGGAACAAGGAAAATGGAGGAAGA 540	S41 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAAGAACAACAACAACATAAAACGCTTCA	601 AGAGGACTAGAACTIGAACTIGAACAACTAGACAACAACAACAACAACAACAACAACAACAACAACAAC	b 2280 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGTGGTAGT 2339 y 661 TGATGAATCTAGTGGAAGATCACGCAACTGCTTTGGAAGAACAACATTAAAGTATTGGG 720	2340 TGATGAATCTAGTGGAATCAGGAACTGCTGTTTGGAAGAACAACTTAAAGGTATTGGG	y 721 AGNTGGATGGCDAACATCTGTAGATGGACGACGCTGGGTTCTTTTACAAGACAT 780 b 2400 AGNTGGATGGSCDAACATCTGTACATGAGAGAGAGACGCTGGGTTCTTTTACAAGAC- 2457	781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA	b 2458 2457 y 841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 900	b 2458 2457	901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAAAA	b 2458 2457

프달	λο qq	601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA
2101 C 2101 3456 C 3456	yo da	
NJT 9 19-845-416-36 equence 36, Application US/09845416	S GS	121 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTACAAGACAT 780
	8 6	CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
Z .	8 %	28/0
VERENT PEPELCATION NUMBER: US/09/845,416 UURRENT FILING DATE: 2001-04-30 PRIOR APPLICATION NUMBER: 60/200,777	qu	
TUMBER OF SEQ. NOS: 36.28 UMBER OF SEQ. NOS: 36.2 OFTWARE: Patentin Ver. 2.1	<u>දි</u> සි	901 AICAAGICIICAAAAACIGGCCGIIITAAAAAGCGGAICIAGAAAAAAAAAA
10 ID NO 36 HUNGTH: 5060	ò	961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
ATE: UND ATE: Homo sapiens 19-845-416-36	ପ୍ର	
7%; Score 1443; DB 10; Length 50 6%; Pred. No. 0;	, 43	1021 CCAGAAGACGGGAAGCATGGCTGGATAACTTTGCCCGGGTGTTGGGGATAATTTAGTCCAAAA 1086 2670
tches 1777; Conservative 0; Mismatches 0; Indels 324; Gaps 1;	ò	1081 ACTIGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACTGGA 1140
1892 GAGCTATGCCTACACACAGGCTGCTTATGTCACCCTCTGTGACCCTACACGGAGCCCATT 1951 61 TCCTTCACACGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120	g ò	ACTUAL AND AND ACTUAL AND AND ACTUAL AND ACT
1952 TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 2011 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATGGTGGTGCTTTTT 180	g & i	
2012 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTTTTC 2071 181 TGCTGAGGACACATTGCAAGCACAAGAGAGAGTTTCTAATGATGTGGAAGTGGAAAGA 240	g v	AGACCTCCAAGGTGAATTGAAGCTCACACACATTTATCACAACCTGGATGAAACAGCAGCAGCAACCTCACAACATTATCACAACCTTGGAAGAAACAG
TGCTGAGGACACATTGCAAGGACACAAGGAGAATTTCTAATGATGTGGAAGTGAAAGA	음 강.	2828 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAG 2887 1321 CCAAAAAATCCGGAGATCCCTGGAAGGTTCCGATGATGATGAGGTCCTGTTACAAAGACGTTT 1380
241 CCAGTICCHTACTCATGAGGGGGAATGATGATTGACAGCCCATCAGGGCCGGGTTGG 300 	4 ×	2888 CCAAAAATCTGAGATCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAGACGTTT 2947
301 TAATATTCTACAATTGGGAAGTAACCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	3 A	GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420	장 <u>염</u>	1441 TTTGGAGCCGGTTCTGACCAGTGGAAGCGTCTGCACCTTTCCTGCAGGAACTTCTGGT 1500 1008 TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 3067
TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT	<u>8</u>	1501 GTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
2312 IAGCATGGAAAAACAAAGCAATITACATAGAGTITTAAATGGATCTCCAGAATCAGGAACT 2371 481 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 540 611 [δ O	1561 AGCAGTTCAGAAGCAGAACGATGTACATACGGCCTTCAAGAGGGAATTGAAAACTAAAGA 1620
GCCTCTTGGACTGGACTGACAAAAACGCCAAGTACAAGAAAAAAAA	& 8	1621 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 1680
2432 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 2491	δ 	1681 AGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTGAGGAGAGAGA

Mon Apr 5 16:30:05 2004

1318 AGACTARACHANICTATCARCAGAGGCCCACAGAGGCCCCCCCCCCCCCCCCC	12.79 TOTAL CONTINUENCE TOTAL CONTINUENC	CONTINUED
1159 TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTCATTGATGGAGAG 1218 121 TGAAGTAAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180 1219 TGAAGTAAAACTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180 1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAATTATCGTGGCTTCTTTC 1278	1103	CTCTGGC 235
	Qy 1103	1102

1603 GANATICAAAACTIATCCAGAGACAGAACGAAAACTICAGAGACTICTCCAGAGACTICTCCAGAGACTICTCAGAGACTICTCAGAGACTICTCCAGAGACTICTCAGAGAGACAGAGACAGAGAGAGAGAGAGAGAGAGAGA	RESULT 11 RESULT 11 (S=09-64-416-32) (S=09-64-416-32) (SEQUENCE 32, Application US/09845416) (SEQUENCE 32, Application US/09045416) (SEQUENCE 1NUCRATION) (TITLE OF INVENTION: DAS SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TILE REFERENCE: DE1142 (CURRENT APPLICATION NUMBER: US/09/845,416 (CURRENT FILING DATE: 2000-04-28 (NUMBER OF SEQ ID NOS: 36 (SOFTWARE: PECTION NUMBER: 60/200,777 (SEQ ID NO 32 (SEQ ID NO
2359 AGATITCAACCGGGCTTGGACGACTTACCGACTGGCTTTCTCTGCTTGATCAAGTTAT 2418 1103	1103

```
1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAGGGGTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACAGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGTITCATACTCATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1519 TAGCATCGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Acids and Peptide Sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACACGAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1339 ccaertrcaracrcardaggggracargarggarrigacagcccarcagggccgggrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 5417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1103.4; DB
Pred. No. 4e-310;
0; Mismatches
                Sequence 39, Application US/10149736
| Publication No. US20030216332A1
| GENERAL INFORMATION:
| APPLICANT: Chamberlain, Jeffrey S.
| APPLICANT: Chamberlain, Jeffrey S.
| TITLE OF INVENTION: Mini-Dystrophin Nucleic Aci;
| FILE REFERENCE: UW-66968
| CURRENT APPLICATION NUMBER: US/10/149,736
| FILE REPERENCE: UW-66968
| CURRENT APPLICATION NUMBER: 00206-17
| PRIOR FILING DATE: 2001-10-04
| PRIOR FILING DATE: 2001-10-04
| PRIOR FILING DATE: 2000-10-06
| NUMBER OF SEQ ID NOS: 96
| NUMBER OF SEQ ID NOS: 96
                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 99.9%;
Matches 1104; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                    FEATURE: OTHER INFORMATION: Synthetic
                                                                                                                                                                                                                                                                                                       SEQ ID NO 39
LENGTH: 5417
                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-149-736-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8,8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                           2076
                                                                                                                                                                                                                                                                                                                                                                                                      2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2316
                                                                            1956
                                                                                                                                                                                                                                      TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2317 idalidaarichagigeagarcaceaachechechechingaagaacaachraagenariege 2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2377 AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACCGCIGGGTICITITACAAGACAI 2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cerrercaaarescaacererracreaagaacaseeerrrrragreearescrrreaga 2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 2556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGAAGACGGAAGCAIGGCIGGAIAACIIIGCCCGGIGIIGGGAIAAIIIAGICCAAAA 2736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTTGAAAAGAGTACAGCACAGAACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 2796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                   300
                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 900
CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACACCCATCAGGGCCGGGTTGG
                                                                                                                                   CCAGITICATACICATGAGGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                     AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                           GAAAGAGTTGAATGACTGCCTAACAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                          TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                          TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGTTTCTTGCCTGGCTTACAGAAGCTGA 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2797 rakacrasaccrahabacraccakacrah 2826
                                                                                                                                                                     1897
                      1777
                                                                                             1837
                                                                                                                                                                                                                                              1957
                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                       2017
                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                    2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1141
                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         961
                                                          181
                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
```

1158

1218

120

1278

180

1338

300

240

1458

360

1398

1578

480

1518

420

1638

540

1698

TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 720

661

ESULT 12

009

ö

240

1398

1458

360

1578

480

1638

540

1698

600

1758

999

1818

720

780

1878

1938

900

840

1518

420

```
1339 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGAGATGAAGA
                                                                                                                                                                                                                                                                           1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                       1519 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                     1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1939 AAAAGATGCAGTGAACAAGATTCACACAGCTGGCTTTAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2059 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2119 ccagaagacgaagcargccrggaraacrirgcccggrgrrgggaraarrragrccaaaa
    TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                            301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                  GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541 GCCICTTGGACCTGAICTTGAAGACCTAAAACGCCAAGTACAACAACAIAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u> AGATCGATGGGCAAACATCTGTAGATGGACAGAACACCGCTGGGTTCTTTTACAAGACAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        961 GGGCAAACTGTATTCACTCAAACAAGATCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                        361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                      421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide Sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 47, Application US/10149736
Publication No. US20030216332A1
GENERAL INFORMATION:
APPLICANT: CHAPLELIAIN, Jeffrey S.
APPLICANT: Harper, Scott Q.
IITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081 ACTTGAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2179 ACTTGAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
US-10-149-736-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
    181
                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                   6 6 6
                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                     B 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 6 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         상 점
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1080
                       1818
                                                                                    AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAAGCAATCCAT 2058
                                                                                                                                                                                                                                                                                                                                                                               GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGAAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gequence 44, Application US/10149736
Publication No. US20030216332A1
GENERAL INFORMATION:
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Harper, Scott Q.
TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences FILE EPERBROKE: UM-06568
CURRENT APPLICATION NUMBER: US/10/149,736
CURRENT FILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: PCT/US01/31126
PRIOR APPLICATION NUMBER: 60/238,848
PRIOR FILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Patentin version 3.1
SEQ ID NO 44
LENGTH: 11443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTTTC 1278
                                                                                                                                                                             cerrencaargecaacererracreaacaacaerecerrrrracrecargecrrreaga 1938
                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                             780
                                                                                                                                         840
                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTTGGCAGTTCATTGATGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAAGA
                                                                                                                                                                                                                     AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                 901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                             AGATCGATCGCCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                         CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 15; Length 11443;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1103.4; DB 1
Pred. No. 6.6e-310;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTTGAAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081 ACTIGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 99.9%;
Matches 1104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
OTHER INFORMATION: Synthetic
S-10-149-736-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8-10-149-736-44
                                                                                                 1819
                                                                                                                                                                             1879
                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                             1939
                                                                                                                                                                                                                                                                                                                                         1999
                                                                                                                                                                                                                                                                                                                                                                                                                     2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2119
                     1759
                                                           721
                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                               196
```

1020

2178

Д

2058

```
1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1338
                                                                                                                                                                                                   2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccagititcaiactcaidaddddiacaidaiddairtigacadcccaicaddddgaridd 1398
                                                                                                                                                                                                                                                                                                                                                 2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rectreacadritidasaderectesadaeacadreatreacageacadreacadadaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                    1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT
                                                                                                                                                             ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                 1999 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                GGGCAAACTGIATICACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAACA
                                                                                                                                                                                                                                                                                                                        CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 9; Length 13957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1103.4; DB 9
Pred. No. 7.5e-310;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. US2000102731A1

GRAERAL INFORMATION:
GRAERAL INFORMATION:
APPLICANT: Bahou, Wadie
APPLICANT: Bahou, Wadie
APPLICANT: Bahou, Wadie
APPLICANT: Sandalon, Ziv
APPLICANT: Gradenko, Dmitri
TITLE OF INVENTION: Adenoviral Vectors
FILE RERERENCE: STONYE-04970
CURRENT APPLICATION NUMBER: US/09/782,378A
CURRENT FILING DATE: 2001-02-12
PRIOR FILING DATE: 2000-10-02
NUMBER OF SEQ ID NOS: 27
SOFTWARE: PatentIn version 3.0
SEQ ID NO 22
LIENGTH: 13957
                                                                                                                                                                                                                                                                                                                                                                                                    ACTIGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                          2179 ACTTGAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 99.9%;
Matches 1104; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-782-378A-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1159
                                                                                  841
                                                                                                                                                                                                                                                                                    2059
                                                                                                                                                                                                                                                                                                                        1021
                                                                                                                                                                                                                                                                                                                                                                                                      1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               챵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                   \dot{\delta}
                                                                                                              셤
                                                                                                                                                               8 8
                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1519 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAAGGTGCTTCA 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1279 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1699 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACCACGTGGTGGTGGTAGT 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1099 GAĞCTATĞCCTACAĞAÇAĞGCTĞCTTATĞTCACCACÇTCTGACCCTACACĞGAĞCCCATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661 TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAAGTATTGGG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                         09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1759 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1339 CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                         1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1219 TGAAGTAAACCTGGACCGTTATCAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                             DB 15; Length 12057;
                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                           52.5%; Score 1103.4; DB 15; Lengt ilarity 99.9%; Pred. No. 6.8e-310; Conservative 0; Mismatches 1; Indels
                     CURRENT APPLICATION NUMBER: US/10/149,736
CURRENT FILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: PCT/USO1/31126
PRIOR FILING DATE: 2001-10-04
PRIOR APPLICATION NUMBER: 60/238,848
PRIOR FILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
SOFTWARE: PATENTIN VERSION 3.1
LENGTH: 12057
                                                                                                                                                                                                                            TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                               OTHER INFORMATION: Synthetic
IS-10-149-736-47
      FILE REFERENCE: UM-06968
                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Simil
Matches 1104; (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
```

```
AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518
                                                                                                                                    CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCAAACTGTATTCACTCAAACAAGATCTTCTATCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2059 GGGCAAACTGTATTCACTCAAAACAAGATCTTCTTTCAACAACAGTGAAGTCAGTGAC 2118
                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                               AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                              TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480
                                                                                                                                                                                                                                        GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA 600
                                                                                                                                                                                                                                                                                                         AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCCTGGGTTCTTTTACAAGACAT 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841 AAAAGAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAAGATCAAAATGAAATGTT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1081 ACTIGAAAAGAGTACAGCACAGACT 1105
                  1399
                                                                               1459
                                                                                                                                            1519
                                                                                                                                                                                                           1579
                                                                                                                                                                                                                                                                       1639
                                                                                                                                                                                                                                                                                                                                       1699
                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                    1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1999
                                               361
                                                                                                              421
                                                                                                                                                                           481
                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             961
```

earch completed: April 5, 2004, 16:32:49 ob time : 541.455 Becs

DNA encod DNA encod A rod sho

enco CDNA

Aad37258 Abk81998 Abk81999 Aax4856 Aax4856 Abk81960 Abk81960 Abx27558 Aav18885 Aav18885 Aan97129 I

Human dys A rod sho Human dys CDNA enco

Aaz48566 A Abk81990 B Acd19399 c Aad37241 P Aad37239 P Aaz48569 Aaz48567

Human dys A rod sho A rod sho Human dys

Mouse isc Shuttle v Mus muscu Partial s Human dys

Aad37240 F Aad37259 Aad37235 F

Н

>

```
New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specified N-terminal domains, rod repeats, utrophin or a specified N-terminal and dysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human, dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                                                                                                                  ABK81999
AAZ48568
                                                                                                                                                                                                                                          AAT27558
AAV18885
                                                                                                                                                                                                                                                                                                                                                                                                          AAZ48569
AAZ48567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 1; Page 43-44; 71pp; English.
                                                                              AAD37258
ABK81998
                                                                                                                                                                                            ABK81960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACD19399
                                                                                                                                                                                                                   AB199799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAZ48566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human dystrophin minigene delta4173.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAD37230 standard; DNA; 4182 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-AUG-2002 (first entry)
                                                                                 4498
53399
13862
13815
13815
19307
13815
3275
3510
4476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-049342/06.
(XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-NOV-2001.
                                                       9999
9999
9911.6
8866.6
8866.6
8566.6
8588.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7787.7
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAD37230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kiao X;
  υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adeno-ass
DNA encod
Human dys
Adeno-ass
DNA encod
CDNA encod
Sequence
CDNA enco
                                                                                                                                                                                                                   (without alignments)
16463.377 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human dys
Adeno-ass
Human dys
Adeno-ass
Adeno-ass
Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human bre
Gene #228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human dys
Human bon
Human dys
Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Adeno-ass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                        gagctatgcctacacacagg......acctcagcactctggaagac 2101
                                                                                                                                                                                      April 4, 2004, 11:55:32 ; Search time 542.141 Seconds (without alignments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aad37234
Aad37252
Aad37252
Aad37253
Aad37263
Aad37264
Aad37264
Aad37260
Abk82005
Abk82005
Abk82005
Abk82005
Abk82005
Abk82005
Abk82005
Abk81059
Abk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Aad37230
                          GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3373863 seqs, 2124099041 residues
                                                                                                                                                                                                                                                                                              US-09-845-416-2_COPY_900_3000
2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                     nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                          IDENTITY NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genesequ2000s:*
genesequ2001as:*
genesequ2001bs:*
genesequ2002s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Geneseq 29Jan04:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      geneseqn2003bs:*geneseqn2003cs:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          geneseqn2004s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          geneseqn1980s:*
geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inimum DB seq length: 0 aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41182
440949
440949
440999
60099
60099
60099
60099
60099
60099
60099
60099
60099
60099
60099
60099
60099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3446
11058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11443
12923
13957
13957
13957
13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.0000

0.000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.0000

0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2101
2101
21001
1579.8
1579.8
1443
14443
14443
11293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1114
1103.4
1103.4
1103.4
1103.4
1103.4
1103.4
1103.4
1103.4
                                                                                                                                                                                                                                                                                                                           erfect score:
                                                                                                                                                                                                                                                                                                                                                                                                             coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                           equence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           earched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   atabase
                                                                                                                                                                                         ü
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ssult
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   222221111111111
2222211111111111
                                                                                                                                                                                         ц
```

a mammalian subject. The present sequence is human delta4173 containing nucleotides 1-1992 (N-terminus, L, R2 and R2), 823 and R24, 824, and 11047-11058 (dystrophin last 3 amino acids)

OY Score 2101; DB 6; Length 4182; Pred. No. 0; Mismatches 0: Todels 0: Gane 0:
CCACCTCTACACGCAGCCCATT 60
CAAGTCATTTGGCAGTTCATTGATGGAGAG 120
CTGAAGACAAGTCATTGGCAGTTCATTGGAGGGGGGGGGG
CGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
240
139
0
TTGACAGCCCATCAGGGCCGGGTTGG 11
CIACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 350
420
TAGCATGGAAAAACAAAGAATTTACATAGAGTTTTAATGGATCTCCAGAAACTGAGAAACT 480 Db TAGCATGGAAAACAAAGCAATTTACATAGATTTTAATGGATCTCCAGAATCAGAACT 1379
0 (
1 7
CCTCTTGGACCTGATTTTTGGACGCTAAGTACAACATAAAGGTCTTCA
660
1559
720
TTAAGGTATTGGG 16
80
CIGGGITCITIACAAGACAI 16
CICAAA1GGCAACGICITACIGAAGAACAGIGCCIIITIAGIGCAIITICAGA 840 CITIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
OUT THE PROPERTY OF THE PROPER

	<u>업</u>	1800 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAAA
059-10227 (rods R22, R2 1058 (dystrophin last 3	çy qa	961 GGGCAAACTGTATTCACTCAACAACATCTTCTTTCAACAGAGAATAAGTCAGTGAC 1020
0 U; 0 Other; ; Length 4182;	γο	1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080
smatches 0; Gaps TANGTCACCACCCTACACGAGCCCATT	ζς O	ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACGGGGGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGGACGGACGGGACGGACGGACGGACGGACGGACGGACGGACGGACGGACGGACGGACGGACGGACGGACGAGAGGACGAGAGACGAGAGACGAGACGAGACGAGACGAGACGAGACGAGAGACGAGAGAGAGAGAACGA
ACCACTCTGACCTACACGGAGCCCATT AAGTCATTTGGCAGTTCATTGATGAGGAGG	<u>ک</u> ۾	1141 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC 1200 2040 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC 2099
GAAGACATTTGGCAGTTCATTGATGGAGAGAGACACACATTTATATTATCGTGGCTTCTTTC	\$ G	1201 CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGAGTAAAAGAGCTGATGAAACAATGGCA 1260
타 월_	상 음	1261 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG 1320
g 8=	ζζ QΩ	1321 CCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 1380
AIGAIGGAITTGACAGCCCATCAGGGCCGGGITGG 11 CTGAITGGAACAGGAAATTATCAGAAGATGAAGA 36 	ò 8	1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1440
전 25 <u></u>	o da	1441 TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 1500
CTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC CATAGAGTTTTAATGGATCTCCAGAATCAGAAACT	ç d	1501 GTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
Catagagitttaatggatciccagaatcagaaact aaaacagaagaagacaaggaaaatggagaa 	රු යි	1561 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA 1620
	ଧ୍ୟ ପ୍ର	1621 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 1680
CTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1 AGGGTCAATTCTCTCACTCACATGGTGGTGGTAGT 6 	<i>장</i> 음	1681 AGGACTAGAGAAACTCTACCAGGAGCCCGGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAA 1740
AATTCTCTCACTCACATGGTGGTGGTAGT GCTTTGGAAGAACAACTTAAGGTATTGGG	중 음	1741 IGTCACTCCGGCTTCTACGAAAGCAGGCTGAGGACGATCAATACTGAGTGGGAAAAATTGAA 1800
	<u>ئ</u> و	1801 CCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT 1860
TGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT GAAGAACAGTGCCTTTTAGAGCTTTCAGA	Oy Dp	1861 TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 1920 2760 TCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 2819
GAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA CACACAACTGGCTTTAAAGATCAAAATGAAATG	oy G	1921 CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAA 1980
TCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1799 TTTAAAAGCGGATCTAGAAAAAAAAAGCAATCCAT 960	\$ q	1981 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC 2040

U.

AAD37255;

ESULT

2940 2101 3000

1836

180

1896

240

300

2016

360

2076

420

2136

540

480

```
AAAGTITCTIGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC 1200
1717 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2737 ACTTGAAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACTGGA
                                                                                                                                                                                                          1837 IGCIGAGGACACATIGCAAGCACAAGGAGATITICIAAIGAIGIGGAAGIGGIGAAAA
                                                                                                                                                                                                                                                                                      1957 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2077 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2137 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2317 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGCAAACTGTATTCACTCAAACAAGATCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                  TGCTGAGGACACATTGCAAGCACACACGAGAGATTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                    TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2437 ccricicaaridecaacercriacreaagaacacrecriririagrecardecrircaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2497 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2617 GGGCAAACTGTATTCACTCAAACAAGATCTTTCTACACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2677 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841 AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081 ACTIGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA
                                                                                                                   1777 rgaagraaaccrggaccgrrarcaacaccrrragaagaagaarrarcerggcrrcrrc
                                                                          121
                                                                                                                                                                  181
                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                 g
                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                     8
                                                                                                                                                                ò
                                                                          2999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACACACGCTGCTTATGTCACCACTCTGACCCTACACAGAGCCCATT 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operably linked to an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker miscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA
                                                           TGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5149 BP; 1489 A; 1236 C; 1269 G; 1155 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 2101; DB 6; Length 5149; Best Local Similarity 100.0%; Pred. No. 0; Marches 2101; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                       Adeno-associated virus vector plasmid, AAV-MCK-delta4173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Page 57-59; 71pp; English
                                                                                                                                                                                                                                                                                    DNA; 5149 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-APR-2000; 2000US-020077P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                    AAD37255 standard;
                                                                                                                      2101
                                                                                                                                                                  C 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                               21-AUG-2002
```

08-NOV-2001

Xiao X;

2196

600

2316

9

2256

2376

720

2496

840

2556

960

900

2436

780

2616 1020 2676 1080 2736

(first entry)

21-AUG-2002

```
3516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3756
                                                                                                                                                                                                                                            1440
                                                                                                                                                                                                                                                                                                                                                                                    1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1800
                                                                                                  1320
                                                                                                                                      2976
                                                                                                                                                                                                         3036
                                                                                                                                                                                                                                                                            3096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                accactacadadacteraceagadeceagadetecerecereagadadadadadadadadada 3396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rereacrescenteraceaageagereageagereaaracreagregeaaaaarreaa 3456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3577 crescraceceresecarecreterresereiresecretecreteseareacecresasaaasteaa 3636
                                                                                                                                                                                                                                                                                                                 1500
                                                                                                                                                                                                                                                                                                                                                                                                                  Greecracaecreaagarearearraaeceecaecaecaecrarrecaeceecearrice 3216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCBAGGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3637 gecactriceadgagaaarrececcrcreaaagagaacereaeccacercaareacerec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccrecacrececreacrescasasaaarasarescascaresaaaacrecassaacr
AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                        GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
                                                                                                                                                                                                                                                                                                               TITGGAAGCCAGITCIGACCAGIGGAAGCGICIGCACCTITCICIGCAGGAACTICIGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccgraaggaaaggcrccragaagacrccaagggagraaaagagcrgargaaacaarggca
                                                                                                    AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACACACCTGGATGAAAACAG
                                                                                                                                CCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT
                                                                                                                                                                                                           ccasasasaccrigagarcccrigasaccriccarcarcariccaciccricriacasacaccirr
                                                                                                                                                                                                                                                                                                                                             TITIGGAAGCCAGTICTGACCAGTGGAAGCGTCTGCACCTTTCTGCAGGAACTTCTGGT
                                                                                                                                                                                                                                                                                                                                                                                   GTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD37234
ID AAD37234 standard; DNA; 3999 BP.
KX
AC AAD37234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2101 C 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C 3757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3757
   2797
                                                                      2857
                                                                                                                                                                                                                                                                              3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1981
                                                                                                      1261
                                                                                                                                        2917
                                                                                                                                                                                                           2977
                                                                                                                                                                                                                                                                                                                 1441
                                                                                                                                                                                                                                                                                                                                                   3097
                                                                                                                                                                                                                                                                                                                                                                                    1501
                                                                                                                                                                                                                                                                                                                                                                                                                        3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1801
                                     1201
                                                                                                                                                                         1321
                                                                                                                                                                                                                                              1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                વ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ζ
                                     2
                                                                                                                                    ă
                                                                                                                                                                                                                                                                                                                                                   હ
                                                                                                                                                                                                                                                                                                                                                                                    ⋩
```

```
1140 ccaerrrcaratercadeseracarearearrreacaccercacaeceseras
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene; HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta399 containing nucleotides 1.1668 (N-terminus, hinge HI and rods RI and R2), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                               New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                Human, dystrophin minigene, muscular, gene therapy, utrophin, spectrin, adeno-associated virus, AAV, Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960 İCCTİCACAĞCAİTIĞGAAĞCİCCIGAAGACAGACATTIĞGCAGITCATIĞARĞGAĞĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recreaceacacarrecaageacacaagaagarrreraargargregaagregreaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900 GAGCTATGCCTACACACACAGGTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGAGGAAGTGGTGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 6; Length 3999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3999 BP; 1223 A; 907 C; 933 G; 936 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75.2%; Score 1579.8; 87.9%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 46-47; 71pp; English
                                dystrophin minigene delta3990.
                                                                                                                                                                                                                                                           27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                28-APR-2000; 2000US-020077P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 87.9
Matches 1846; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                    (XIAO/) XIAO X.
                                                                                                                                                                                   WC200183695-A2
                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                         08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 0801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                            Kiao X;
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B &
```

1019

959

1079

180

1139

1441 TITIGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 2216	RESULT 4 AAD37256 TD AAD37256 standard; DNA; 4966 BP. XX AC AAD37256; XX AC AAD37256; XX XX XX XX KW Human, dystrophin minigene; muscular; gene therapy; utrophin; spectrin; KW adeno-associated virus; AAV; Duchenne muscular dystrophy; DND; BND; XX XX XX KW Human, dystrophin minigene; muscular gene therapy; utrophin; spectrin; XX KW Adeno-associated virus; AAV; Duchenne muscular dystrophy; DND; BND; XX OS Unidentified. OS Unidentified. OS Chimeric. XX XX NO200183695-A2. XX DB 08-NOV-2001. XX PD 08-NOV-2001. XX PD
6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	#X2XX2X22X22X22X22X22X22X22X22X22X22X22X
TAATATTCTACAATTGGGAAGTAAGTTGGAACAGGAAAATTATCAGAAGATAGGGAAGG 120 AACTGAAGTACAAGAGCAATGATCTCCTAAATTCAAGATGGGATGCCTAGGGTAGC 1319 AACTGAAGTACAAGAGCAATGAATCTCCTAAATTCAAGATGGGATGCCTAGGGTAGC 1319 TAGCATGGAAAAACAAGAGCAATTAAATACATAAGATTTTAATGGATCTCCAGAATCCAGAAAC 1319 GAAAGAGTTCAAATGACTGAACAATTAAAAAAAAAAAA	ACTTGAAAAGGTACCAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA

Φ

```
28-APR-2000; 2000US-0200777P
    (XIAO/) XIAO
       Xiao X;
```

WPI; 2002-049342/06

new dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.

셤

В ò a ò

ò

g à g ∂ QQ ઠ Ω ઠ g ઠે 엄 ઠ 셤 ò ď ∂ В 8 g ò 셤 ठ

ò

Example 1; Page 59-60; 71pp; English

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence

Sequence 4966 BP; 1403 A; 1216 C; 1232 G; 1115 T; 0 U; 0 Other;

1776 1836 2016 2076 2136 1956 2196 1657 GAGCTATGCCTACACACGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1716 180 240 300 360 420 480 600 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120 09 241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1957 TAATATITCTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATIATCAGAAGAIGAAGA 2017 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1777 igaagiaaacciccaccertaicaaacacririagaagaagiariarceiccrictric CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAATCAGAAACT GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCCAAGATGGGAATGCCTCAGGGTAGC 2077 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT TGCTGAGGACACATTGCAAGCACAGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA Gaps Length 4966; 72; Indels 183; Query Match 75.2%; Score 1579.8; DB 6; Best Local Similarity 87.9%; Pred. No. 0; Matches 1846; Conservative 0; Mismatches 72; 1897 481 121 361 421 181 541

ď

ጵ 쉱 ጵ q

⋧

q

3

8 %

 δ 셤 δ 유 à g à g

8 6 8

8 ò 임

ਨੇ

1020 1080 1200 2673 1260 1320 1380 2853 1440 2913 1500 1560 3033 1620 2793 3093 3153 2376 2436 2484 2534 2733 840 960 720 780 900 961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 2197 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA rgargaarcragregagarcacccaacrecrecrircgaagaacaacrraaggrarrege AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA gécriga c------crager corda á craaca craritada de creciente de actor de construir de actor de construir de actor de construir de constr 841 AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAGATCAAAATGAAATGTT GACTGTTACTCTGGTGACACA-----ACCTGTGGTTACTAAGGAAACTGCCATCT-ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT 1081 ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA ccenaaggaaaggcrccragaagacrccaagggagraaaaggcrgargaaacaarggca AGACCTCCAAGGTGAAATTGAAGCTCACAGATGTTTATCACAACCTGGATGAAAACAG CCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT **GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAAGTCTCTCAACATTAGGTCCCA** gganaacangaachtcaagnggagngaachtcggaaaaaagnchchchacahnaggnccca TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT GTGGCTACAGCTGAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCC grogeracadergaagargargaarraadeedgeeageeacerarregaggeeactrree **AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA** ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACGAGGAGCAGCCTTTGGA TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG ccaaaaaarccrgagarcccrggaaggrrccgargargcagrccrgrracaaagacgrrr -----ccaaacragaaargccarcrrccrrgargrrgaag 2437 2614 2914 1561 1621 601 2257 2317 721 2377 2485 2535 2570 2570 1141 1201 2674 1261 2734 1321 2794 1381 2854 1441 1501 2974 3034 3094 661 901

```
181
                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2401
                                                                                                                                                                                                                                    ۲
                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
d
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     કે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                         1800
                                                                               3273
                                                                                                       1860
                                                                                                                                                                          3393
                                                                                                                                                                                                 1980
                                                                                                                                                                                                                                                2040
                                                                                                                                                                                                                                                                      3513
                                                                                                                                                                                                                                                                                                                   3573
            AGGACTAGAGAAACTCTACCAGGAGCCCCAGAGGGCTGCCTCCTGAGGAGAGAGCCCCAGAA 1740
                                                                                                                             3333
                                                                                                                                                    TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 1920
                                                                                                                                                                                                                                                                                             TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 2100
                                                                                                                                                                                                                        crescasaccesresesesarcrecrearreacrerectecaadarcaedadaadreaa 3453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human, dystrophin minigene; muscular; gene therapy; utrophin, spectrin;
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
                          TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGGGGTCAATACTGAGTGGGAAAAATTGAA
                                                                                                       CCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT
                                                                                                                    TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC
                                                                                                                                                                                                  CTGGCAGCCCGTGGCCGATCTCCTCTTGACTCTCCCAAGATCACCTCGAGAAAGTCAA
                                                                                                                                                                                                                                                GGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC
                                                                                                                                                                                                                                                                     GGCACTTCGAGGAGAATTGCGCCCTCTGAAGAGAACGTGAGCCACGTCAATGACCTTGC
                                                                                                                                                                                                                                                                                                            TGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3990
                                                                                                                                                                                                                                                                                                                                                                                                                            ВР.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                            AAD37262 standard; DNA; 4990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cytomegalovirus.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ×
                                                                                                                                                                                                                                                                                                                                            C 2101
                                                                                                                                                                                                                                                                                                                                                                   C 3574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-NOV-2001
                                 3154
                                                                             3214
                                                                                                                            3274
                                                                                                                                                                          3334
                                                                                                                                                                                                                        3394
                                                                                                                                                                                                                                                                      3454
                                                                                                                                                                                                                                                                                              2041
                                                                                                                                                                                                                                                                                                                   3514
                                                                                                                                                                                                                                                                                                                                                                 3574
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD37262;
                                                                                                                                                    1861
                                                                                                                                                                                                                                                1981
            1681
                                                        1741
                                                                                                       1801
                                                                                                                                                                                                 1921
                                                                                                                                                                                                                                                                                                                                            2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xiao X;
```

Example 1; Page 67-68; 71pp; English

```
2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2280
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) element. The dystrophin minigene operably linked to an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a cytomegalovirus (CMV) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1681 GAĞCTATĞCCTACACACAĞĞCTĞCTTATĞTCACCACCTÇTĞACCACTACAĞĞĞĞĞĞĞĞTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                801 IGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1921 CCAGTTTCATACTCATGAGGGGTACATGATGATGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1981 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2221 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAGAGACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTACAAGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1741 recrireacadearringgaagericengaagacaagrearringgeagricarrigargaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1861 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGITICATACICATGAGGGGIACAIGAIGGATITGACAGCCCAICAGGGCCGGGIIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2041 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2101 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2341 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGAGGACACATTGCAAGCACAAGAAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTGAAGTACAAGAGCAGATGAATCTCCTAAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 87.9%; Pred. No. 0;
Matches 1846; Conservative 0; Mismatches 72; Indels 183:
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4990 BP; 1439 A; 1185 C; 1208 G; 1158 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
```

સ ⊁ સ

≿ સ

≿

લ ≿

ă

≿ ∺

Db 3358 TCAAGAGGCCACGGATGACTGCACTCAAGCTGAGGTGATCAAGGGATC 3417 Qy 1921 CTGGCAGCCCGTGGGCATCTCCTCTCTCCAAGATCACTCCAGAAAAGTCAA 1980 3418 CTGGCAGCCGTGGCGATCTCCTCTTCACTCTCTCCAGAACACTCAAGATCAA 3477 Qy 1981 GCACTTCGAGGAGAAATTGCGCCTTGAAAGAACATCACCTCGAGAACCTTGC 2040 bb 3478 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAACGTCAATGACCTTGC 2040 COA1 TCGCCAGCTTACGAGCACTCTCACGCTCTAAAGACCTCAACGACTCTGC 3537 Qy 2041 CGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTAATAACCTCTGGAAGA 2100 Bb 3538 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCTGGAAGA 3597 Qy 2101 C 2101 Bb 3598 C 3598	RESULT 6 AAD37237 ID 3AD37237 XX AC AAD37237; XX AC AAD37237; XX DT 21-AUG-2002 (first entry) XX DY XX Buman dystrophin minigene delta3849. XX WO 200183695-A2. XX WO 200183695-A2. XX WO 200183695-A2. XX XX XX XX XX XX XX XX XX XX XX XX XX	one.
	ACTTGAAAAGGTACACACACACACACACACACACACACAC	1621 ACCIGTAATCATGAGTACTTTGAGACTGTACGAATTTTTGACAGAGCACCTTTGGA 1680

৬ ⊁ ৬

ક્ર ≿

≿

ACTTGAAAAGGATACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA	1261 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAAAG 1320 1836 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAAAG 1320 1321 CCAAAAAACTCCGAAGATGAAGCTCCACACGTTGTTATACACAACCTGGATGAAAACAG 1895 1322 CCAAAAAAACCTGAAGATGCCTGGAAGGTTCCGATGATGCCTGTTACAAAGACGTTT 1380 1896 CCAAAAAAACCTGAGAACCCTCGAAGAGTTCCGAAGATGCTCTGTTACAAAAAAACTTTATATATA	1956 GGATAACATCAAGTGAAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 2015 1441 TTTGGAAGCCAGTTCTGACCAGTGGAAGCCTCTGCACCTTTCTCTGCAGGAACTTCTGGT 1500 2016 TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 2075 1501 GTGGCTACAGCTGAAAGATGAATTAAACCCGGCAGGCAGCCTATTGGAGGCGACTTTCC 1560 2006 GTGGCTACAGCTGAAAGATGAATTAAAGCCGGCAGGCACCTATTGGAGGCGACTTTCC 1560 2006 GTGGCTACAGCTGAAAAGATGAATTAAAGCCGCAGGCACCTATTGGAGGCGACTTTCC 1560 2006 GTGGCTACAGCTGAAAAGATGAATTAAAGCCGCGAGGCACCTATTGGAGGCGACTTTCC 1560	AGCAGTTCAGAAGCAACGATGTACATAGGSCCTTCAAGAGGGAATTGAAAACTAAAGA	1681 AGGACTAGAGAAACTCTACCAGGAGCCCAGGAGCTGCCTCCTGAGGAGAGAGCCCAGGA 1740 2256 AGGACTAGAGAACTCTACCAGGAGCCCAGGAGCTGCCTCCTGAGGAGAGAGA	1801 CCTGCACTCCGCTGACTGGCAGAAAATAGATGGACCCTTGAAAGACTCCAGGAACT 1860 2376 CTGCACTCCGCTGACTGGCAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT 2435 2436 TCAAGAGGCCCCCGCGCCAGGCCCTTGAAGACTGACGTGACTCCAGGAACT 2435 2436 TCAAGAGGCCCACGGATGACCTGACGTGATCCAAGGCACT 1920 2436 TCAAGAGGCCACGGATGACCTGAAGCTGCCCAAGCTGATGACTGAC	1921 CTGGCAGCCCGTGGGCGATCTCCTTCATTGACTCTCTCCAAGATCACCTCGAGAAGTCAA 1980 [041 TGGCCGGCTTACGACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA 210 616 TGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACGGTATAACCTCAGCACTCTGGAAGA 267. 101 C 2101 676 C 2676
8 8 8 8 8 8 8	6 6 6 6	8 8 8 8 8	8 6 6 6	ठ वं ठ व	8 6 8	6 6 6	6 6 6 6
Best Local Similarity	181 TGCTGAGGACACATTGCAAGGACACAGGAGGATTTCTAATGATGTGGAAGTGGTGAAAGA 240		TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 137 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAGAAAG	9 1440 GCCICIIGGACCIGAICIIGGAGCCIAAACGCCAAGIACAACATAAGGIGCIICA 1499 9 601 AGAAGAICIAGGAACAAGAACAAGICAATICICACCACATGAGGIGGIAGT 660 1500 AGAAGAICIAGAACAAGAACAAGICAATICICICACTCACATGGIGGIAGT 1559 9 661 TGAIGAATCIAGGAGAICACGCAACTGCTTTGGAAGAACAACTTAAGGIATTTGG 720 1500 AGAAGAICACGGAACAAGICACCAACTGCTTTGGAAGAACAACTTAAGGIATTTGGG 720 1500 AGAAGAATCTAGGAGAICACGCAACTGCTTTTGGAAGAACAACTTAAGGIATTTGGG 720	AGATCGATGGCAAACATCTGTAGATGGCAGAAGACGGGGGGGG	1678 1677 941 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAATG	1678

```
g
                                                 상
원
                                                                                                                              ద
                                                                                                                                                       ò
                                                                                                                                                                                     g
                                                                                                                                                                                                          g &
                                                                                                                                                                                                                                                                  5 6 5
                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                   상
음
상
                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                   쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
à
                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to an isolated nuclectide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle
                                                                                                                                                                                                                                                                                                                                                                                                               New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                      Human, dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4825 BP; 1369 A; 1175 C; 1204 G; 1077 T; 0 U; 0 Other;
                                                                                               Adeno-associated virus vector plasmid, AAV-MCK-delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 61-62; 71pp; English.
                AAD37257 standard; DNA; 4825 BP
                                                                                                                                                                                                                                                                                  27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                           28-APR-2000; 2000US-0200777P.
                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                    (XIAO/) XIAO X.
                                                                                                                                                                                                                               WO200183695-A2
                                                                                                                                                                          Homo sapiens.
Unidentified.
Chimeric.
                                                                    21-AUG-2002
                                                                                                                                                                                                                                                       08-NOV-2001
                                          AAD37257;
                                                                                                                                                                                                                                                                                                                                                              Xiao X;
```

```
2016
                                                                                                                                                                                                                                                                                                                                               2136
                                                                                                                                                                                                                                                                                                                                                                                                                               2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2376
                                                                                                   1956
                                                                                                                                                                                                                                                                 2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080
                                                                                                                                            360
                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              960
AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG
                                                              CCAGITICATACICATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG
                                                                                                     CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                   TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                            AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                               GADAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             reargaarcragagarcaccaacrecrecriregaagaacaacrraagarrage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGAC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---------ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cceraaggaaaggcrccragaagacrccaaggggggraaaagagcrgargaacaarggca
                                                                                                                                            TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                          TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                          GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1081 ACTIGAAAAGAGIACAGCACAGACICAIAGAITACIGCAACAGIICCCCCIGGACCIGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAAGAGCTGATGAAACAATGGCA
                                                                                                                                                                                                                                                                 2017
                                                                                                                                                                                                                                                                                                                                                 2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                       1837
                                                              241
                                                                                                     1897
                                                                                                                                                                                   1957
                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                               2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1717 rectricacacterriscaacerectigaacacaagrearrisceacirearidargaada 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCTATGCCTACACACACAGGTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels 324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 84.6%; Pred. No. 0;
Matches 1777; Conservative 0; Mismatches 0; Indels 324
```

Н 1657 61

≿ ă ⋩ ä 121 1777

Я ≿

sapiens

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a
                                                                                                                                                                                                                                                                                                                                                                       New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytomegalovirus (CMV) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4848 BP; 1405 A; 1144 C; 1180 G; 1119 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1; Page 68-70; 71pp; English.
                                                                                                                                                                                                               28-APR-2000; 2000US-0200777P.
                                                                                                                                                                            27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                   WPI; 2002-049342/06.
                Cytomegalovirus.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                       (XIAO/) XIAO X.
                                                                                                WO200183695-A2
                                                                                                                                      08-NOV-2001.
                                                                                                                                                                                                                                                                                               Kiao X;
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                      1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2100
                                                                             2712
                                                                                                                                                         2772
                                                                                                                                                                                               1500
                                                                                                                                                                                                                                                                                                                  2892
                                                                                                                                                                                                                                                                                                                                                        1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCTATAACCTCAGCACTCTGGAAGA 3432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGCCCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAGTCAA
                                                                                                                   GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
                                                                                                                                      GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
                                                                                                                                                                                               TITGGAAGCCAGIICIGACCAGIGGAAGCGICIGCACCIIICICIGCAGGAACIICIGGI
                                                                                                                                                                                                                        TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGG
                                                                                                                                                                                                                                                                            GIGGCIACAGCIGAAAGAIGAATIAAGCCGGCAGCACCIAIIGGAGGCGACTIICC
                                                                                                                                                                                                                                                                                                                                                                                            2893 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         accretaarcardagracretrgagacretacgaararrirergagagagagcerrraga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCCTTGAAAGACTCCAGGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          creschecceresesenterecrearieserereresesesentesereseseseseses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGAACGTGAGCCACGTCAATGACCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCGTGAGCACGTCAATGACCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA
AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG
                                     1321 CCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGCAGTCCTGTTACAAAGACGTTT
                                                                         ccaaaaaarccrgagarccrggaaggrrccgargargcagrccrgrracaaagacgrrr
                                                                                                                                                                                                                                                                                                                                                          <u> AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCCTTCAAGAGGGAATTGAAAACTAAAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ċ 3433
                                                                             2653
                                                                                                                   1381
                                                                                                                                                       2713
                                                                                                                                                                                               1441
                                                                                                                                                                                                                                  2773
                                                                                                                                                                                                                                                                            1501
                                                                                                                                                                                                                                                                                                                  2833
                                                                                                                                                                                                                                                                                                                                                        1561
                                                                                                                                                                                                                                                                                                                                                                                                                                      1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3433
```

```
1680 GAGCTATGCCTACACACAGAGCTGCTTATGTCACCACTTCTGACCTACACAGAGCCCATT 1739
                                                                                                                                                                                                                               1799
                                                                                                                                                                                                                                                                                                                     1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2039
                                                                                                                                                                                                                                                                                                                                                                                                              1860 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2040 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                1740 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1920 ccadificaracticardagodoracardarodariradacadoccarcagodocogorios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                             121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                 1800 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                     181 TGCTGAGGACACATTGCAAGCACACAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGITICATACICATGAGGGGIACAIGAIGGATITGACAGCCCCAICAGGGCCGGGIIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 TAATATICTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                             1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                0; Indels 324;
Query Match 68.7%; Score 1443; DB 6; Length 4848; Best Local Similarity 84.6%; Pred. No. 0; Matches 1777; Conservative 0; Mismatches 0; Indels 324.
                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.

Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3849

(first entry)

21-AUG-2002

AAD37263;

ВÞ.

AAD37263 standard; DNA; 4848

2856 GIGGCTACAGGTGAAAGATGATGAATTAAGCCGGCAGGACCTATTGGAGGGGAGTTTCC 2	1561 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA 162 	1621 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 168 2976 ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 303	1681 AGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAA 174	1741 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAA 180 	. 1801 CCTGCACTCCGCTGACTGGCAQAAAAATAQATGAGACCCTTGAAAGACTCCAGGAACT 186	1861 TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATC 192 	1921 CTGGCAGCCCGTGGGCGATCTCCCTATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAA 198	1981 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC 204	2041 TGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACTCTGGAAGA 21	2101 C 2101 3456 C 3456	RESULT 9 AAD37264 ID AAD37264 standard; DNA; 5060 BP.	AAD37264; 21-AUG-2002 (first entry)	rirus (AAV) vector plasmid, AAV-E-CMV-3849. minigene: miscular: gene therapy: utrophin: s	adeno-associated virus; AAV; Duchenne muscular dystrophy; DVD; BMD; Becker muscular dystrophy; ds.	Homo sapiens. Cytomegalovirus. Unidentified.	CALMELIC. WO200183695-A2.	08-NOV-2001.	27-APR-2001; 2001MO-US013677. 28-APR-2000; 2000US-0200777P.	(XIAO/) XIAO X.
q 0	QY da	QQ O	QY CD	VQ da	VQ dd	QQ QQ	Qy do	ζο Q0	λδ Q	λδ qa		*						· -	
TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 48	TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCAGAATCAGAAACT GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAA	GARAGAGITGAATGACIGGCTAACAAAAACAGAAGAACAAGAACAAGAAATGGAAGAAGAAGAAGAACACTTGAAGAAGAACACTTGAAGAAGAACAAGAAGAAGAACAAGAAGAACAAGAAGAACAAGAAG	GCCICTTGGACCTGGATCTTGGAGGCCTAAAACGCCCAAGTACAACAACATAAGGTGCTTCAAGAAGAACAAGAACAAGGATGCTTCAAAAGAACAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGA	AGAAGALCTAGAACAAGAACAAGICAAGGGTCAATICICTCACTCACATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG	GALGANIC LAGIGAGALCACGCAACLIGCIGCII I GGGAAGAACAAC I RAGGAALCA SA AGATCCAATGCGAACAACTTCTGTAGAAGAACGAACGAAC	AGAICGAIGGGGAACGICIGIAGAIGGAACAGAAGACGCIGGGIGGG	AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT	ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT	GGGCAAACTGTATTCACTCAAACAAGATCTTTCTAACACTGAAGAATAAGTCAGTGAC	24 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA 10	458	141 AAAGTITCTIGCCTGGCTIACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC 1200	201 CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAAGAGCTGATGAAACAATGGCA 1260	CCGIANGGAANGCICLIAGANGACICCIANGGGAAGTAAAAAGGGAGGAAGCIGAIGAAGAAGAGAGAAGCTGCAAGGGAAAAAGAGAAGAG	616 AGACCTCCAAGGTGAAATTGAAGCTCCACAGATGTTTATCACAACTGGATGAAACAG 2675	676 CCAAAAAATCCTGGAATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 2735	381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCA 1440	TITGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT	796 TTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 2855

Xiao X;

WPI; 2002-049342/06

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1; Page 70-71; 71pp; English.

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) enhancer, a cytomegalovirus (CMV) promoter and a small polyA signal sequence

2011 2071 2251 2311 2431 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 2491 TGCTGAGGACACATTGCAAGGACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 2131 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 2191 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 2371 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1951 120 180 240 300 360 420 480 540 600 9 9 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG rccrrcacaccarrragaagcrccrgaagacaagrcarrragcaagrrcarrgargaagag TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA TAATATTICTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAGAAAACAAAAATGGAGGAAGA GCCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACATGGTGGTGGTGGTGGTGGT GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 0; Indels 324; Gaps Sequence 5060 BP; 1449 A; 1217 C; 1234 G; 1160 T; 0 U; 0 Other; Length 5060; DB 6; Score 1443; Di Pred. No. 0; 0; Mismatches Query Match
Best Local Similarity 84.6%;
Matches 1777; Conservative 1952 2012 2072 2132 2192 2252 2312 2372 2432 61 121 181 301 421 481 541 601 241

ପ୍ର	2492 AGAAGATCTA	GAACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGT 2551
δ	661 TGATGAATCT	AGTGGAGATCACGCAACTGCTTTGGAAGAACAACT
qq	2552 TGATGAATCT	TIGGG 2
δ	721 AGATCGATGG	GCAAACATCTGTAGAAGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 780
qq	2612 AGATCGATGG	2 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGAC 2669
ò	781 CCTTCTCAAA	ITGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 840
q	2670	598
ò	841 AAAAGAAGAT	4
QQ	2670	26
ò	901 ATCAAGTCTI	rccar 96
đđ	2670	5969
ò	961 GGGCAAACTG	GTGAC 102
đ	2670	5693
à	1021 CCAGAAGACG	CAAAA 108
qq	2670	266
ζ	()	TACTGCAACAGTTCCCCCTGGACCTGGA
đ	2670	ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 270
ò	1141 AAAGTTTCTT	SAAGCTGAACAACTGCCAATGTCCTACAGGATGCTAC 120
qq	08 AAAGTTT	TTACAGAAGCTGAAACTGCCAATGTCCTACAGGATGCTA
ò	1201 CCGTAAGGAA	CTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA 126
qq	68 CC	CTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA 2
ò	1261 AGACCTCCAA	ATTGAAGCTCACAGATGTTTATCACAACCTGGATGAAAACAG 132
дg	28 AGAC	cacacagargritarcacaaccregargaaaacag 288
ò	1321 CCAAAAATCC	TGAGATCCCTGGAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 138
Ор	888	TGAGATCCCTGGAAGGTTCCGATGCAGTCCTGTTACAAAGACGTTT 294
ò	1381 GGATAACATG	GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1440
д	დ	CTCAACATTAGGTCCCA 300
ò	41 T	20
දි	3008 TTTGGAAGCC	CAGGAACTTCTGGT 306
È	501	GTGCCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACTTATTGGAGGCGACTTTCC 1560
đ	œ	GGAGGCGACTTTCC 312
ò	61	62
셤	3128 AGCAGTTCAG	318
ò	1621 ACCTGTAATC	
Q	- 4 (80	rrigga 324
ò	681 A	Ċ
qq	3248 AGGACTAGAG	ccadaa 330

Qy 1243 GCTGATGAAACAATGGCAAGACCTCCAAGGTCAAATTGAAGCTCACACAGATGTTTATCA 1302 Db 3139 GCTGATGAAACAACGCCAAGGTCAAATTGAAGCTCACACAGATGTTTATCA 3198 Qy 1303 CAACCTGGATGAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGATGTTATCA 3196 Db 3199 CAACCTGGATGAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGT 1362 Db 3199 CAACCTGGATGAAAAAAAAAAAAATCCTGAGAATCCCTGGAAAGGTTCCGATGATGCAGT 1358 CAACCTGGATGAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Db 3319 TCTCAACATTAGGTCCCATTTGGAAGCCCAGTGTGACGAGGGAAGCGTCTGCACCTTTC 3378	1603 3499 1663 3559	1723 3619 1783 3679	1843 3739 1903 3799 1963	3978 3978	AAD06794 ID AAD06794 standard; DNA; 5952 BP. XX XX AC AAD06794; XX XX DF 06-AUG-2001 (first entry) DF 06-AUG-2001 (first entry) XX XX XX XX XX XX XX XX XX XX XX XX XX
	1103 1102 2239 TATTGGAGCCTCTCCTACTCAGACTGTTACTCGGTGACACCTGTGGTTACTAAGGA 2298 C 1103	2359 AGATTICAACCGGGCTTGGACAGAACTTACCGACTGGCTTTCTCTGCTTGATCAAGTTAT 2418 1103 1102 2419 AAAATCACAGAGGTGATGGTGACCTTGAGGATATCAACGAGATGATCAAGGC 2478 1103 1102	m 2 m 2	2599 AATTGAAAGAATTCAGAATCAGTGGGATGAAGTACAAGAACCCTTCAGAACCGGAGGCA 2658 1103 1102 2659 ACAGTTGAATGAAATGTTAAAGGATTCAACACAATGGCTGGAAGCTAAGGAAGG	2779 AGATGCAAACCAAAAAAAACCAAGCAAGCAATGGCCAAAAGACCTCCGCCAGTG 2838 1103	1103

```
18
                                                                                                                                                                                                                                  .
1
                                                                                                                                                                                                                                                                                                                                            1.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                      i.s
                                                                           /label= 54 junction site
/note= "Dystrophin gene is split at this site and
attached to an inteln sequence. The resulting fragment
2952. 2953.
                                                                                                                                                                                                                                                                                                                           and
fragment
                                                                                                                                                                                             /label= S3_junction_site
/note= "Dystrophin gene is split at this site and
attached to an intein sequence. The resulting fragment
attached to plasmid pSD3"
198. .3199
                                                                                                                                                                                                                                                                                                                                                                                                                   /label= S1_junction_site
/note= "Dystrophin gene is split at this site and
attached to an intein sequence. The resulting fragment
used to produce plasmid pSD1"
                                                                                                                                                                                                                                                                                                                           this site resulting f
                                                                                                                                                                                                                                                                                                       /label= S2_junction_site
/note= "Dystrophin gene is split at
attached to an intein sequence. The
used to produce plasmid pSD2"
3300. 3301
                                location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000WO-CA001216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0159868P
                                                                                                                                                                             *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNIV DALHOUSIE.
UNIV PITTSBURGH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-367297/38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200129243-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-OCT-2000;
Homo sapiens
                                Key
misc_recomb
                                                                                                                                                              misc_recomb
                                                                                                                                                                                                                                                                      misc_recomb
                                                                                                                                                                                                                                                                                                                                                                                 misc_recomb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Paul XI,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UYDA-)
(UYPI-)
```

Use of spontaneous or automatic protein splicing to join two or more peptides at junction site involves expressing extein peptides having coreacting portions of split intein attached to them, so that peptides splice.

Example 1; Fig 2; 81pp; English.

The invention relates to a method directed to the use of spontaneous or automatic protein trans-splicing to join two or more peptides at junction site. This method involves expressing extern peptides having co-reacting portions of split intein attached to them, so that peptides will splice automatically under suitable conditions. The invention also provides methods for circumwententing virion packaging size limitations in recombinant virus particle, by splitting a coding region for a protein to be delivered into two or more extein genes, which are packaged in separate virus particles and are co-delivered in a target cell for the protein. In particular, the method is used for trans-splicing the complete protein. In particular, the method is used for trans-splicing human dystrophin and in gene therapies of recombinant adeno-associated virus (AAV) particles that encode trans-spliced dystrophin, for treating diseases such as Duchenne muscular dystrophy (BMD). The present sequence is human dystrophin gene (Becker

1860 A; 1344 C; 1410 G; 1338 T; 0 U; 0 Other; Sequence 5952 BP;

ñ Gaps 53.8%; Score 1131; DB 5; Length 5952; larity 68.6%; Pred. No. 1.1e-306; Conservative 0; Mismatches 0; Indels 960; Query Match Best Local Similarity Matches 2101; Conserv

1070 1130 1190 1250 1310 1370 1430 1610 1730 1790 1850 1020 1910 1080 1010 1490 1550 1670 ccagaagacggaagcarggcrggaraacrrrgcccggrgrrrgggaraarrragrccaaaa 1970 540 180 240 300 360 420 480 009 780 840 006 960 950 120 999 720 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1131 ccaditicanacticandaggggnacangarggaringacagcccarcaggcccgggrigg GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAAGTGCTTCA reargaarcrastacaccaacracrecristrasaagaacaacrraaggrarrass cerrereaargecaacererracreaacaacaerecerrrragrecarecerreaea GGGCAAACTGTATTCACTCAAACAAGATCTTTCTTTCAACACTGAAGAATAAGTCAGTGAC GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 991 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC reaagraaaccregaccgrrarcaaacaccrrragaagaagrarrarcgregcrrcrrrc TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCCGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1191 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1311 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA 541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA AAAAGAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAAGATCAAAATGAAATGTT ATCAAGTCTTCAAAAACTGGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAAGGTATTGGG AAAAGAAGATGCAGTGAACAAGATTCACACAGCTTTTAAAGATCAAAATGAA 1551 951 121 1011 241 301 361 1251 421 481 1431 601 1491 721 1611 781 1671 841 1731 1791 961 1851 1021 1911 61 181 661 901 q a 8 B 8 엄 ò d 8 8 ે g à 셤 중 점 ठ g à g ठ q à g 성 암 셤 8 ద $\dot{\delta}$ 엄 8 ò

	qq 	3051 CCGTAAGAAAGCTCCTAQAAGACTCCAAGGGAGTAAAAGAGCTGATGAACAATGGCA 3110
11GANANGAGIACAGCACAGSAAACIGAAAIAGCAGIICAAGCIAAAACAACGGGAIG1 2030	ði i	AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAACAG
GGAAGAGATTTTGTCTAAAGGGCAGCATTTGTACAAGGAAAAACCAGCCACTCAGCCAGT 2090	α ::	
	÷ 8	131 CCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGATCTGTTTACAAAAAATCTTTTTTTT
GAAGAGGAAGTTAGAAGATCTGAGCTCTGAGTGGAAGGCGGTAAACCGTTTACTTCAAGA 2150	ò	1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1440
GCTGAGGGCAAAGCAGCCTGACCTCTGGACTGACCACTATTGGAGCCTCTCCTAC 2210	qa	dgataacatgaacttcaagtggagtgaacttcggaaaaagtctctcaacattaggtccca
1102	충 名	1441 TITGGAAGCCAGTICTGACCAGTGGAAGCGTCTGGACCTTTTCTCTGGAAGCTTCTGTGT 1500 3291 TITGGAAGCCAGTTTTGACAGTGGAAGCGTCTGGAACCTTTCTTGGAAGCAGTAGTGAAGTTCTTGAAGCGAAGCTTTGTAGAAGCGAAGCGAAGCGAAGTTTCTTGAAGCAAGC
TCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCCAAACT 2270	<i>δ</i>	1501 GTGGCTACAGGTGAAAGATGAATTAAGCGGGAGGCAGCCTATTGGAGGCGACTTTCC 1560
AGAAATGCCATCTTCCTTGATGTTGGAGGTACCTGCTCTGGCAGATTTCAACCGGGCTTG 2330	ସ୍ପ	GTGGCTACAGCTGAAAGATGATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCC
	<i>&</i> 8	1561 AGCAGTTCAGAAGCAGAACCATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAAG 1620
GACAGAACTTACCGACTGGCTTTCTCTGCTTGATCAAGTTATAAAATCACAGAGGGTGAT 2390	8 8	
GGTGGGTGACCTTGAGGATATCAACGAGATGATCATCAAGCAGAAGGCAACAATGCAGGA 2450		ACCIGIMATICALGAGAGACICITICAGAGACIGAGAGACIGAGAGAGAGAGAGAGAGAGAGAG
	ਤ ਰੀ 	AGGACTAGAGAAACTCTACCAGGAGCCCAGAAGCTGCCTCCTGAGGAGAGAGCCCAGAA
TIIGGAACAGGGGCCCCCAGIIGGAAGAACICAIIACCGCIGCCCAAAAIIIGAAAAA 2510	Š	TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTCAGTGGGAAAAATTGAA 18
CAAGACCAGGAATCAAGAGGCTAGAACAATCATTACGGATCGAATTGAAAATTCAGAA 2570	යි දී —	3591 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGGGTCAATACTGAGTGGGAAAAATTGAA 3650
1102	£ 40	CTGCACTGCACTGACTGGCAGAAAAATAGATGAGAACCCTTGAAAGACTCCAGGAACT
TCAGTGGGATGAAGTACAAGAACACCTTCAGAACCGGAGGCAACAGTTGAATGAA	· &	
1102 ***********************************	qa	3711 TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGGGATC 3770
7554745	ð í	1921 CIGGCAGCCCGIGGGCGAICTCCTCATGACTCTCTCCAAGATCACCTCGAGAAAGTCAA 1980
CAGAGCCAAGCTTGAGTCATGGAAGGAGGGTCCCTATACAGTAGATGCAATCCAAAAGAA 2750	9 &	, 0
1102 	₹ AB	GGCACTTCGAGGAGAATTGCGCCTCTGAAGAGAACGTGAGCCACGTCAATGACCTTGC
	ò	TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGA
GGCAAATGACTTGGCCCTGAAACTTCTCCGGGGATTATTCTGCAGAIGATACCAGAAAAGT 2870	· 음 &	3891 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCACTCTGGAAGA 3950 2101 C 2101
CCACATGATAACAGAGAATATCAATGCCTCTTGGAGAAGCATTCATAAAAGGGTGAGTGA	3 8)U
	RESU AAD3	T 12 260 AAD37260 standard; DNA; 4414 BP.
AAAGTITCITGCCIGGCITACAGAAGCIGAAACAACGCCAAIGTCCIACAGGAIGCIAC 1200 	XX AC AAD37 XX DT .21-AU	AAD37260; 21-AUG-2002 (first entry)
CCGTRAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA 1260	- D	Adeno-associated virus vector plasmid, AAV-MCK-3447.

```
유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                염
                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
     g
                                             ò
                                                                    g
                                                                                                   8
                                                                                                                                    엄
                                                                                                                                                                       ò
                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           reaagraaaccreeaccerrarcaacacerrragaagaagaarrarcereecerrerre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAATATICTACAATIGGGAAGTAAGCIGATIGGAACAGGAAAATTATCAGAAGATGAAGA 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and oysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene perably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (DMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human, dystrophin minigenes, a muscle
                                                                                                                                                                                                                                                                                                                                                         New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGITICALACICALGAGGGGIACAIGAIGGAITIGACAGCCCAICAGGGCCGGGIIGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin;
adeno-associated virus; AAV; buchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTGAGGACACACATGCAAGCACGAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4414 BP; 1255 A; 1075 C; 1086 G; 998 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 4414;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1114; DB 6;
Pred. No. 5.4e-302;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 65-66; 71pp; English
                                                                                                                                                                                              27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53.0%;
97.0%;
                                                                                                                                                                                                                             2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 53.0
Best Local Similarity 97.0
Matches 1135; Conservative
                                                                                                                                                                                                                                                                                                                          WPI; 2002-049342/06.
                                                                                                                               WO200183695-A2
                                                             Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                             28-APR-2000;
                                                                                                                                                                                                                                                             (XIAO/) XIAO
                                                                                                                                                              08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                              Xiao X;
                                                                                                                                                                                                                                                                                              市界英界市市市等級努力公司公司公司公司公司公司
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ਲ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
```

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2676
                                                                                                                                                                                                                                          2256
                                                                                                                                                                                                                                                                                                              2316
                                                                                                                                                                                                                                                                                                                                                                                     2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2556
                                                                                                                                                                       2196
                                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                        009
                                                                                                                                                                                                                                                                              099
                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTTAGTGCCATGGCTTTCAGA
                                                                                                                                                                                                                                   GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                   rgargaarcragragarcacgcaacrgcrccrrrrggaagaacaacrraaggrarrggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATGAAGATGAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   arcaagretercaaaactggccgtttraaaagcggateragaaaagaaaaagcaatecat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCAAACTGTATTCACTCAAACAAGATCTTCTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccagaagacggaagcarggcregaraacrrrgcccggrgrrgggaraarrragrccaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTIGAAAAGAGIACAGCACAGACICAIAGAIITACIGCAACAGIICCCCCIGGACCIGGA
                          AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                     TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAACT
                                                                                                                                                                       GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                           <u> AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATCAGAAACT
                                                                                                                                       GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                repeat domain; muscle disease; trophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mini-dystrophin protein deltaR4-R23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mini-dystrophin peptide; spectrin-like repeat do
Duchenne's muscular dystrophy; DMD; dystrophin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141 AAAGTTTCTTGCCTGGCTTACAGAAGCTGA 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rgadciggaccrcaagcigcgccaagciga 2826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABK81997 standard; DNA; 5417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding
                                 2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
361
                                                                                                     2077
                                                                                                                                                                        2137
                                                                                                                                                                                                            541
                                                                                                                                                                                                                                              2197
                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                   2257
                                                                                                                                                                                                                                                                                                                                                                                       2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABK81997;
                                                                   421
                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 13
ABK81997
```

```
2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1020
                                                       1698
                                                                                                                                                             1758
                                                                                                                                                                                                                                                                     1818
                                                                                                                                                                                                                                                                                                                                                                                 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2178
                                                                                                           99
                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                     1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGGGCTTCA
                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCAAACTGTATTCACTCAAACAAGATCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACTCACATGGTGGTGGTAGT
                                                                                                                                                          TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cerrencaaaregeaacererracreaagaacagreeerrrrragreearegerrreaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                               AGATGGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; human; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cDNA encoding human dystrophin, full length HDMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTTGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2179 ACTTGAAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA; 11241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-OCT-2001; 2001WO-US031126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chamberlain JS, Harper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UNMI ) UNIV MICHIGAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-435334/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200229056-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-2002
                                                                                                           601
                                                                                                                                                               1699
                                                                                                                                                                                                                                                                        1759
                                                                                                                                                                                                                                                                                                                                                                                 1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABK82005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABK82005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABK82005
                                     8 8
                                                                                                                                           엄
                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscil disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                              A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1159 recrireacaccarringeas gerecteas da casacacarringe de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de activation de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGAGGACACATTGCAAGCACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1279 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1399 TAATATICTACAATIGGGAAGTAAGCIGATIGGAACAGGAAAAATTAICAGAAGAIGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1519 TAGCATGGAAAAACAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGCAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1103.4; DB 6; Length 5417;
Pred. No. 5.8e-299;
0; Mismatches 1; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 5417 BP; 1700 A; 1192 C; 1182 G; 1343 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 12; 145pp; English
                                                                                                                                                               2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 99.9%;
Matches 1104; Conservative (
                                                                                                        04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                           SO;
                                                                                                                                                                                                                                                                        Chamberlain JS, Harper
                                                                                                                                                                                                                    (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                          WPI; 2002-435334/46.
WO200229056-A2
                                                                                                                                                               06-OCT-2000;
                                                       11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (DMD). The
invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1339 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
```

X & X O O O O O O O O O O X &

В

3

g ਨੇ 9

ਨੇ

q

à

q

ਨ੍ਹੇ

g

à

ਨੇ

q

g à g δ 유 à g à d 8

à

1938

960

```
The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats. Where n is an even number between 4-24, or a mucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polymucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                       GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2059 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                             ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                             <u>AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 11443 BP; 3707 A; 2339 C; 2502 G; 2895 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mini-dystrophin peptide, spectrin-like repeat domain;
Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA encoding mini-dystrophin protein deltaR9-R16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTGAAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTIGAAAAGAGIACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure, Fig 17, 145pp, English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABK82002 standard; DNA; 11443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-OCT-2001; 2001WO-US031126.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chamberlain JS, Harper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-435334/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200229056-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-APR-2002.
                                                                                                                                                                                            1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                            1879
                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nvention
                                                                                                                                                                                                                                                                                                                                1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 18
ABK82002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOCOCOCCC STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE ST
                                                                                                          8
                                                                                                                                                                              g
                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1159 rocircacaccarricgaagcrocreaagacaagroarricgcagricarreargaaga 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     600
                                                                                     The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats domains where the domain like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a human dystrophin polynucleotide sequence used in the creation of the mini-dystrophin peptides of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGAGGACACATTGCAAGCACACAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1339 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1579 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAAGAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1759 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1279 Tecreaceacacarrecaaccacaacacacacacaacarrrcraarcarcrecaacrecaaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1459 AACTGAAGTACAAGAGGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1519 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1103.4; DB 6; Length 11241;
Pred. No. 8.7e-299;
0; Mismatches 1; Indels 0; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 11241 BP; 3738 A; 2325 C; 2656 G; 2522 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTTAGAAGAAGTATTATCGTGGCT
                                23; 145pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 99.9
Matches 1104; Conservative
                        2; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
```

disease;

muscle

ö

දු පු	8	· 6	Sear																					
52.5%; Score 1103.4; DB 5y 99.9%; Pred, No. 8.8e-29		1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCCTACACGGAGCCCATT 60	61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG 120	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATGGTGGCTTCTTTC 180		181 IGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240 	241 CAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300 1339 CCAGTTTCATACTCATGAGGGGTACATGATGAATGAAAGCAACAGCCCATCAGGGCCGGGTTGG 1398	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360	99 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 14	361 AACTGAAGTACAGAGGGGAATGACTCCCTAAATTCAGAATGCCTCAGGGTAGC 420 	421 TAGCATGGAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480 	481 GAAAGAGIIGAAIGACIGGCIAACAAAAACAGAAAGAAGGAAAAIGGAAAAIGGAGGAAG 540	79 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA	541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA 600 	601 AGAAGATCTAGAACAAGAACAAGTCAAGGGTCAATTCTCTCACATGGTGGTGGTAGT 660 	661 TGATGAATCTAGTGGAGATCACGGAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 720	1759 TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGG 1818 721 AGATGGATGGGCAAACATCTGTAGATGAACAGAAGACGGTTGGGTTCTTTTACAAGACAT 780	1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878	781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 840	841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAATGAAATGTT 900	1939 AAAAGAAGGAQGAAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1998	901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGGAATCCAT 960 	961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTCAACAAGAAGAAGAAGTGAGTG	
One	Mat	۵ 🖈	α ~	>-	۵,	> .a	> Q	>	Ω ;	. .q	> 0	> .	.Ω	Ω <	ъ. д	ب <	Ω >-	Д	> .<	· >-	Q	ъ а	> .	•

```
April 4, 2004, 12:04:07; Search time 5477.46 Seconds (without alignments) 16625.161 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                 US-09-845-416-2_COPY_900_3000
2101
1 gagctatgcctacacacagg......acctcagcactctggaagac 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6940544
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3470272 seqs, 21671516995 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                          M nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IDENTITY NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             inimum DB seq length: 0 aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb hrgg: *
gb hrgg: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
gb ba: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_pat: *
em_ph: *
em_pl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3337
4409
1011
1011
                                                                                                                                                                                                                                                                                                                                                         itle:
erfect score:
equence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atabase :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   earched:
                                                                                                                                                                                                                   no un
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result Score No. Score 1 1 1293 3 1103.4 4 1103.4 7 1103.4 9 1103.4 9 1103.4 1 10 12 9 11 1 10 12 1 1 1 10 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Length D 8689 5952 5952 5952 5952 11043 111443 113957 113957 113957 113957 113957 113957 113915 113915 113915 113915 113915 113915	# 1	AX538622 AR304238 AX104299 AX538619 AX538624 AX538624 AX538627 AX60637 AX538620 AX53862	AX538622 Sequence AX538622 Sequence AX538619 Sequence AX538619 Sequence AX538619 Sequence AX538619 Sequence AX538619 Sequence AX538619 Sequence AX538621 Sequence AX538621 Sequence AX638620 Sequence AX538620 Sequence
1112 1112 1113 1113 1110	0 N N N N N N N N N N A 4 4 4 4 4 4 4 4 4	5952 5952 5952 5952 111443 11244 113957 113957 113957 113967 113967 113967 113967 113967 113967 113967 113967 113967 113967 113967 113967 113967 113967 113967		្រុយស្ថេស្កុក្ក ១ ១១៧ "២៨៥៤	AX33622 Sequence AX134538 Sequence AX13458 Sequence AX53624 Sequence AX53624 Sequence AX53627 Sequence AX53629 Sequence AX53629 Sequence AX53621 Sequence AX53621 Sequence AX53621 Sequence AX538521 Sequence AX538521 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538592 Sequence AX63859 Mouse dys AX63859 Mouse dys AX633322 Sequence
1123 11103 1103 103		® W W W H H W M W W W W M W M W M W M W M	0 0	XX538622 XX114289 XX114289 XX538619 XX538624 XX538627 XX538621 XX538621 XX538621 XX538621 XX538621 XX538621 XX538621 XX538621 XX538621 XX538621 XX538633392	AX538622 Sequence AX114289 Sequence AX538619 Sequence AX538619 Sequence AX538629 Sequence AX538627 Sequence AX538627 Sequence AX538621 Sequence AX538621 Sequence AX538620 Sequence X14228 Human mRNA AX538621 Sequence X14288 Sequence AX538620 Sequence AX538620 Sequence AX538620 Sequence AX538620 Sequence AX538620 Sequence AX538689 Mouse dys AX60153 Sequence AX538699 Mouse dys AX60153 Sequence AX538699 Mouse dys AX60153 Sequence AX63899 Mouse dys AX60153 Sequence
2	wwwaaaaaaa	WWW-44WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	0 0	MX538624 XX538624 XX538624 XX538627 XX538531 XX538531 XX538521 SEDMDR	AX134238 Sequence AX538619 Sequence AX538624 Sequence AX538624 Sequence AX538624 Sequence AX538629 Sequence AX538629 Sequence XX4298 Human mRNN AX538620 Sequence AX538621 Sequence AX538621 Sequence AX538620 Shortened M18025 Mouse dys AX306153 Sequence AX538689 Mouse dys AX306153 Sequence AX53889 Sequence AX53889 Sequence AX53889 Sequence AX63392 Sequence AX63392 Sequence AX63392 Sequence AX63392 Sequence
3 1 103. 5 1 103. 6 1 1103. 1 103. 1 1103. 1 1103. 1 1 1 103. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Ი Ი Ს Ქ Ქ Გ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ Რ	0 0	XX114289 XX538624 XX538627 XX538627 XX638581 XX638581 XX638581 XX538620 XX538620 XX538620 XX538620 XX538620 XX5385820 XX5385820 XX5385820 XX5385820 XX5385820	AX114289 Sequence AX538619 Sequence AX538624 Sequence AX538627 Sequence AX538581 Sequence AX538581 Sequence AX538581 Sequence AX538520 Sequence AX538520 Sequence AX538520 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX633322 Sequence AX633322 Sequence AX633322 Sequence AX633322 Sequence AX633322 Sequence AX633322 Sequence
4 1103.		71	0 0	XX538619 XX538624 XX538624 XX538627 XX538621 XX538620 XX538620 XX538620 XX538620 XX538620 XX538620 XX538620 XX538532	AX538619 Sequence AX538627 Sequence AX538627 Sequence AX406537 Sequence AX538581 Sequence AX538591 Sequence AX538620 Sequence X14288 Human mRNA AX538620 Sequence X14288 Canis fa E30220 Shortened AX538582 Sequence AX53858 Sequence AX53858 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence AX53859 Sequence
0 11103. 11103. 11103. 11103. 11103. 11		4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	XX538624 XX538627 XX538581 XX538581 XX538581 XX538621 SBDDR SBDDR SBDDR SBDDR SBDDR SBDDR SBDDR SBDS SBSS SBS	AX538624 Sequence AX53851 Sequence AX538581 Sequence AX538581 Homo sapidate AR250815 Sequence X14298 Human mRNA AX538621 Sequence AX538620 Sequence AX538620 Sequence AX538620 Shortened M18025 Mouse dys AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence
6 1103. 1103. 1103. 1103. 110 1103. 112 1103. 113 99911. 114 866. 115 866.			0 0	XK538627 XK538623 XK538581 XK520819 SEDDER XK538621 XK538621 XK538621 XK538621 XK538621 XK538585 XK538582	AX538627 Sequence AX538581 Sequence AX538581 Sequence AX538581 Sequence AX538620 Sequence AX538620 Sequence AX538620 Sequence AX538620 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX63859 Mouse dys AX63859 Mouse dys AX63859 Sequence AX63859 Sequence AX63859 Sequence AX63859 Sequence
7 1103.			0 0	XX409637 XX538581 XX538581 XX5385019 XX538620 XX538621 XX070485 XX530220 XX538582 XX306153 XX538582	AX400637 Sequence AX538581 Sequence M18533 Home sequence X14298 Human mRNN- AX538620 Sequence AX538621 Sequence AX538621 Sequence AX60020 Shortened M18025 Mouse dys MX806153 Sequence AX53882 Sequence AX53889 Sequence AX53889 Sequence AX63392 Sequence AX63392 Sequence AX63392 Sequence AX63392 Sequence AX63392 Sequence
8 1103. 11003. 11103. 112 1003. 113 1003. 114 99999999999999999999999999999999999			0 0	X538581 UMDYS RR220819 SDMDR SSDMDR XK538621 RP070485 RP070485 RP070485 RV538585 RV538585 RV538585 RV538585	AX538581 Sequence M18533 Home sapi AR220819 Sequence X14298 Human mRNA AX538621 Sequence AX538621 Sequence AX53852 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence AX63859 Mouse dys
1103. 110 1103. 112 1103. 113 999. 114 919. 116 866. 118 866.		WW 27 07 08 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0 0	TUMDYS 18.20819 18.20819 18.20819 18.238620 18.238621 18.230220 18.23852 18.238582 18.238582 18.238582	M1853 Homo sapie AR220819 Sequence X14298 Human mRNV AX538620 Sequence AX538621 Sequence AF070485 Canis E B30220 Shortened M18025 Mouse dys AX538592 Sequence AX63859 Mouse dys AR093392 Sequence AR142592 Sequence
100.1103. 112 999 113 999 115 961. 117 866. 118 866.		00000000000000000000000000000000000000	0 0	NR220819 SEDMDR XKS38620 XKS38621 RP070485 MUSDYS XK306153 XKS38582 KKS38582	AR220819 Sequence X14298 Human mRNI AX538620 Sequence AX538621 Sequence AF070485 Canis f E30220 Shortened M18025 Mouse dys AX306153 Sequence AX53889 Sequence AX53889 Sequence AX63392 Sequence AR093392 Sequence AR19592 Sequence
112 112 123 144 145 165 165 165 165 165 165 165 165 165 16	277484444444	4 M 4 M 4 M M M M M M M M M M M M M M M	0 0	ISDMDR XXS38621 XF070485 XF070485 MUSDYS XX306153 WUSDYSA WUSDYSA	X14298 Human mRNA AX538621 Sequence AX538621 Sequence AF070485 Canis Fe E30220 Shortened M18025 Mouse dys AX538582 Sequence AX538589 Mouse dys AR033392 Sequence AR142592 Sequence
112 1143 1143 1143 1143 1143 1143 1143 1		000046886666666666666666666666666666666	0 0	XX538620 XX538621 XX538621 330220 MWSDYS XX538582 XX538582 MWSDYSA RWSDYSA	AX538620 Sequence AX538621 Sequence AF070485 Canis E30220 Shortened M18025 Mouse dys AX538582 Sequence AX53859 Sequence AR093392 Sequence AR1942592 Sequence
113 114 116 116 118 118 118 118 118 118 118 118		48488888888888888888888888888888888888	0 0	XX538621 XX070485 330220 MUSDYS XX306153 XX538582 XX538582	AX538621 Sequence AF070485 Canis E E30220 Shortened M18025 Mouse dys AX306153 Sequence AX53889 Sequence M68859 Mouse dys AR093392 Sequence AR19592 Sequence
4 2 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	464444444	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0 0	APO 70485 33020 MUSDYS XX306153 XX538582 MUSDYSA	AF070485 Canis fa E30220 Shortened M18025 Mouse dys AX306153 Sequence AX538582 Sequence AX53859 Mouse dys AR033322 Sequence AR142592 Sequence
115 116 117 118 118 119 119 119 119 119 119 119 119		4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0 0	330220 MUSDYS XX306153 XX538582 MUSDYSA RNC93392	E30220 Shortened M18025 Mouse dy M18025 Mouse dy AX51858 Sequencc AX51859 Mouse dy M68859 Mouse dy AR093392 Sequencc AR142592 Sequence
110 866. 119 866.	444444	938117	0 0	MUSDYS XX306153 XX538582 MUSDXSA RR033392	M18025 Mouse dys AX306153 Sequence AX53858 Sequence M68859 Mouse dys AR093392 Sequence AR142592 Sequence
113 113 120 120 130 130 130 130 130 130 130 130 130 13	44444	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		XX306153 XX538582 MUSDYSA XR093392	AX306153 Sequence AX538582 Sequence M68859 Mouse dys AR093392 Sequence AR142592 Sequence
138 866. 20 866.	44444	381	0	XX538582 MUSDYSA AR093392	AX538582 Sequence M68859 Mouse dys AR093392 Sequence AR142592 Sequence
19 866. 20 866.		930000	0	MUSDYSA AR093392	M68859 Mouse dys AR093392 Sequence AR142592 Sequence
20 866.	.	930		AR093392	AR093392 Sequence AR142592 Sequence
210	ਰਚ	930			AR142592 Sequence
7	4			NR142592	
22 718.		ò		330221	E30221 Shortened
3 714.	4	50		330219	E30219 Shortened
635		7 .		SAGDAS	X13369 Chicken mRN
5 624.	6	63		4SDMDF1	man
527.	'n	96		(SDMDA)	man a
7 514.	4	1481		BC009242	Homo
8 409.	σ.	74		330218	orten
86		38		- 1	Sequenc
0 361,		030		AX538583	AX538583 Seguence
1 361.	7	10302		HSMUPS	X69086 H.sapiens
350.	ė.	070	0		AJ002967 Rattus
3 34	16.6	348		53861	
4 344.	9	89	10	C0241	Mus
5 344.	16.4	3521	٠	AF339031	Danio
34	16.3	34	10	C0621	
7 34	16.3	39	10	C05018	Mus mu
34	16.3	9	•	A63605	מָ
34	16.3	04		AR281528	Sequenc
34	16.3	032		3607	37 Seg
1 34	16.3	32		3152	81529 S
2 336.	16.0	9		AX107972	7972 Sequenc
3 336.	9	60		3858	38584 \$
4 336.	Ģ.	60	0	Y122	2229 M.mus
33	15.8	333		AX538589	385

RESULT 1

AX538622

DEFINITION Sequence 42 from Patent W00229056.

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

AX538622

PAT 23-NOV-2002

 m

```
TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGTAAACCTGGACCGTTATCAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGITICATACICATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
 1 (bases 1 to 5952)
Xiao,X. and Liu,P.X.
Method and vector for producing and transferring trans-spliced
                                                                                                                                                                                                                                                                                         GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                               TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGTITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                       GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                              Score 1131; DB 6;
Pred. No. 1.2e-257;
0; Mismatches 0;
                                                Patent: US 6544786-A 1 08-APR-2003,
Location/Qualifiers
1. .595.2
/organism="unknown"
/mol_type="genomic DNA"
                                                                                                                                                                                                Query Match
Best Local Similarity 68.6%;
Matches 2101; Conservative
                                                                                                                                                                                                                                                                                                                                                                               951
                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1551
                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                           source
REFERENCE
AUTHORS
TITLE
                                                                       JOURNAL
                                                                                          FEATURES
                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              중 음
                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ک</u> ۾
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원 상
                                                                                                                                                                                                                                                        1482
                                                                                                                                                                                                      CCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAGTC 3318
                                                                                                                                                                                                                                                                                                                                                                                                                          TATTGGAGGGGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAG 3498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCC 1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCT 3738
                                                                                                                                                                                                                                                                                                                             TGAGGAGAGACCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATAC 1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         readdagadacccadaargreacredcrreracdaaagcaggergaggreaarac 3678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGA 1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rcaccrcdagaaagrcaaggcacrrcgaggagaaarrgcgccrcrgaaagagaacgrgag 3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAA 3978
 TGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGA 3138
                                                                                                                                                                                                                                                                               TCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCC
                                                                                                                                                                                                                                                        TCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                     TATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGC
                                    GCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCA
                                                                       CAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGT
                                                                                                                                            CAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGT
                                                                                                                                                                                 CCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGGGATCTCCTCATTGACTCTCTCCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCCTCTGAAAGAGAACGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCCATTCAGCTCTCACCGTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCAGCACTCTGGAAGAC 3997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCAGCACTCTGGAAGAC 2101
                                                                     3139
                                                                                                                                            3199
                                                                                                                                                                                                                                                                                         3319
                                                                                                                                                                                                                                                                                                                                                                                                                                         3439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3919
                                    1243
                                                                                                         1303
                                                                                                                                                                               1363
                                                                                                                                                                                                                   3259
                                                                                                                                                                                                                                                        1423
                                                                                                                                                                                                                                                                                                                             1483
                                                                                                                                                                                                                                                                                                                                                                3379
                                                                                                                                                                                                                                                                                                                                                                                                     1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3979
 ਨ
                                  ⋩
                                                                     ŏ
                                                                                                                                          ă
                                                                                                                                                                                                                   ŏ
```

1010

120

950

Gaps

Indels 960; Length 5952;

1070

1130

240

1190

300

1310

1250

420

360

1370 1430 1490 1550 1610 1670 1730 900 480 540 900 099 720 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTTAGTGCATGGCTTTCAGA GAAAGAGTTGAATGACTGGCTAACAGAAAAGAAGAAGAAGAAGAAGAAAAGAAGAAAAGAGAAGA rgargaarcragregagarcacgcaacrgcrcrrrrggaagaacaacrraaggrafragg TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT GCCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACAACAACAAGTGCTTCA AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT agarcgargggaaacarcrgragarggacagaagaccgcrgggrrcrrrracaagacar AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTAATTGGG CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1611 781 1671 841 721 원 상 원 8 ò

PAT 12-JUN-2003

linear

DNA

AR304538 Sequence 1 from patent AR304538 AR304538.1 GI:31693691

ESULT 2
A304538
OCUS
CCESSION
TEFINITION
TERSION
TEXSION
TEXPWORDS
OUNCE
ORGANISM

Unknown. Unclassified. Unknown.

1103	CGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGGTAAAAAAGACTGATGAACAAGGAAAAAAAA	1381 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCA 1440		AGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCTCCTGAGAAGAGGCCCAGAA	1801 CTGCATTCCGCTGACTGGCAGAAAATAGATGAGACCTTGAAAGACTCCAGGAACT	3771 CTGGCAGCCCGTGGGCATCCCTCATTGACTCTCCCAAGATCACTCGGAAAACTCAA 3830 1981 GGCACTTCGAGGAAATTGCGCCTCTGAAAGAACGAGGCCACGTCAATGACCTTGC 2040 1983 GGCACTTCGAGGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACTTGC 3890 2041 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACTTTGC 3890 1041 TCGCCAGCTTACCACTTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACTCTGGAAGA 2100 105 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACTCTGGAAGA 3950 106 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACTCTGGAAGA 3950
1731 AAAAGAAGATGCAGTGAACAACACACACTTAAAGATCAAAATGAAATGTT 1790 09 901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCATCTAGAAAGGAAAAGGAAAAGGAATCCAT 960 09 1791 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGATCTAGAAAAAAAA		2091 GAAGAGGAAGTTAGAAGATCTGAGGTGAAAGGGGGTAAACCGTTTACTTCAAGA 2150 1103	1103 1102 Db 2271 AGAAATGCCATCTTCCTTGAGGTACCTGCTCTGGCAGATTTCAACCGGGCTTG 2330 Qy 1103	2391 GGTGGGTGACCTTGAGGATATCAACGAGATGATCATCAAGCAAAGGCAACAATGCAGGA 2450 1103	1103 1102 Db 2571 TCAGTGGGATGAACAACACTTCAGAACCGGAGGCAACAGTTGAATGTT 2630 Db 2571 TCAGTGGGATGAACAACACTTCAGAACCGGAGGCAACAGTTGAATGTT 2630 Qy 1103	CAGAGCCAAGCTTGAGTCATGGAAGGAGGGTCCCTATACAGTAGATGCAATCCAAAAGAA AATCACAGAAACCAAGGAGTTGGCCAAAGACCTCCGCCAGTGGCAGACAAATGTAGATGT GGCAAATGACTTGGCCCTGAAACTTCTCCGGGATTATTCTGCAGATGTACGAAAAGT

Ŋ

```
1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2390
                                         1490
                                                                                                 1550
                                                                                                                                                      1610
                                                                                                                                                                                                             1670
                                                                                                                                                                                                                                                                     1730
                                                                                                                                                                                                                                                                                                                            1790
                                                                                                                                                                                                                                                                                                                                                                                   1850
                                                                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                             1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITGGAACAGAGGCGTCCCCAGTTGGAAGAACTCATTACCGCTGCCCAAAATTTGAAAAA 2510
                                                                     099
                                                                                                                                                                                   780
                                                                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                         960
               900
                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCAAACTGTATTGACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2331 GACAGAACTTACCGACTGGCTTTCTCTGCTTGATCAAGTTATAAAATCACAGAGGGTGAT
                                  CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2151 GCTGAGGGCAAAGCAGCCTGACCTAGCTCCTGGACCACTATTGGAGCCTCTCCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAATGCCATCTTCCTTGATGTTGGAGGTACCTGCTCTGGCAGATTTCAACCGGGCTTG
                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                              1611 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                   AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2031 GGAAGAGATTTTGTCTAAAGGGCAGCATTTGTACAAGGAAAAACCAGCCACTCAGCCAGT
                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                            TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                     AGATCGATGGCCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT
                                                                                                                                                                                                                                           CCTTCTCAAA TGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                  AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                            ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                   ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGAAGTTAGAAGATCTGAGCTCTGAGTGGAAGGCGGTAAAACCGTTTACTTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAGACTGTTACTCTGGTGACACACACCTGTGGTTACTAAGGAAACTGCCATCTCCAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTGGGTGACCTTGAGGATATCAACGAGATGATCATCAAGCAGAAGGCAACAATGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1491
                                                                                                                                                                                                                                                                       1671
                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                               1731
                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                      1791
                                                                                                                                                                                                                                                                                                                                                                                                                                             1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2271
                                                                                                                                                        1551
                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2451
                541
                                                                       601
                                                                                                                            661
                                                                                                                                                                                   721
                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2391
                                                                                           8 8
                                    셤
                                                                     8
                                                                                                                                                g
                                                                                                                                                                                   Š
                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                       8 8
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                           $ A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    월 수 월
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1370
                                                                                                  PAT 11-MAY-2001
                                                                                                                                                                                                                                                                                                  PITTSBURGH OF THE COMMONWEALTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                 Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                        Paul, X.L. and Xiao, X. Method and transferring trans -spliced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  951 rectreacacatrragaagereergaagacaagrearrageagricarraargaagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1071 TGCTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGGAGGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           891 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          reaagraaaccreeaccerrarcaaacaecrrraeaagaagrarrarcereecrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGAGGACACATTGCAAGCACGAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGTTTCATACTCATGAGGGGTACATGATTGGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGGAGGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53.8%; Score 1131; DB 6; Length 5952;
larity 68.6%; Pred. No. 1.2e-257;
Conservative 0; Mismatches 0; Indels 960
                                                                                                  linear
                                                                                                                                                                                                                                                              peptides
peptides
Patent: WO 0129243-A 1 26-APR-2001;
PATHOUSIE UNIVERSITY (CA) ; UNIV. OF PI:
SYSTEM OF HIGHER EDUCATION (US)
Location/Qualifiers
1..5592
                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/mol_type="unassigned DNA"
/db xref="taxon:9606"
2897. .2898
/note="84 junction site"
3198. .3199
/note="82 junction site"
                                                                                               AX114289 5952 bp
Sequence 1 from Patent WO0129243
AX114289
                                                                                                                                          GI:14031259
                                                                                                                                                                    Homo sapiens (human)
                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 2101; Conserv
                                                                                                                                          AX114289.1
2101 C 2101
                           C 3951
                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                           3951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                          TEESTON
TEESTON
TREION
SYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                           SFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                   JOURNAL
                                                                  3SULT 3
<114289
                                                                                                                                                                                                                                                                                                                            SATURES
```

⋩

	Db 3831 GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGACCTCATCTCATGACCTTGC 3890 Qy 2041 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACTCTCAGAAGA 2100 Db 3891 TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGAAGA 3950 Qy 2101 C 2101 Db 3951 C 3951	RESULT 4 AX538619 AX538619 LOCUS LOCUS DEFINITION Sequence 39 from Patent W00229056. ACCESSION AX538619. VERSION AX538619.1 GI:25271163 KEYWORDS SOURCE ORGANISM Synthetic construct ORGANISM patificial sequences.	ANTHORS Chamberlain, J.S. and Harper, S.Q. TITLE Mini-dystrophin nucleic acid and peptide sequences JOURNAL Patent: WO 0229056.4 app. 11-APR-2002; THE REGENTS OF THE UNIVERITY OF MICHIGAN (US) FEATURES 1. 5417 Mol_type="unassigned DNA" Ab xref="taxon:32630" Note="Synthetic"		Control Cont
CAAGACCAGCAATCAAGAGCTAGAACAATCATTACGGATCGAATTGAAAGAATTCAGAA TCAGTGGGATGAAGTACAAGAACACCTTCAGAACCGGAGGCCAACAGTTGAATGAA	1103	GGAGAGGCTGCATAGATTACTGCAACGGTTCCCCTGGACCTGGA GCGAGAGGCTGCTTTGGAAGAAACTCATACTGTTTCTCTTTTTTTT	AGACCTCCAAGGTGAAATTGAAGCTCACAGAGGTTTTATCACAACCTGGATGAAAACAGGTGAACAGGTGAAAAAACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGGTGAACACCTCCAAGGTGAAATTGAAGCTCACACATGTTTTATCACAACCTGGATGAAAACACACCTCCAAAAAAATCCTGGAAGTTCCTGGAAGGTTCCGATGATGTTTATCACAACAGGTTTCCCAAAAAAATCCTGAAGATCCTGGAAGGTTCCGAAGAGTTCCAAAAAAATCCTGAAGAACATCCTGGAAGGTTCCGAAAAAAATCCTGAAGAGTCCTGGAAGAGTTTCGGAAAAAAAA	3231 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCA 3290 1441 TITGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 3291 TITGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGT 3350 1501 GTGCTACAGCTGAAAGATGATGAATTAAGCCGCAGGGAACCTATTGCAGGAGCACTTTCC 150331 GTGCTACAGCTGAAAGATGATGAATTAAACCGGCAGGAACCTATTGCAGGAGCGACTTTCC 1560 13351 GTGGCTACAGCTGAAAGATGATGAATTAAACCGGCAAGCAA	AGGACTICAGAACCAAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA AGCAGTTCAGAAGCAAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA ACCTGTAATCATGAAACTATACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGA ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATTTTCTGACAGAGCAGCCTTTGGA ACCTGTAATCATGAGTACTCTTGAGACTGTACGAATTTTCTGACAGAGCAGCCTTTGGA AGGACTAGAGAAACTCTACGAGAGCCCAGAAGTATTTCTGACAGAGAGAG

ጅ ፅ ጵ

```
AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT
                                                                                                                  9
TS OF THE UNIVERSITY OF MICHIGAN Location/Qualifiers
                                                                                                                52.5%; Score 1103.4; DB 6; 99.9%; Pred. No. 4.1e-251; ive 0; Mismatches 1;
                                                                                                                                                                     GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCT
                                       construct
DNA"
                          1. .11443
/organism="synthetic co
/mol_type="unassigned DI
/db_xref="taxon:32630"
/note="Synthetic"
                                                                                                                                           Conservative
  REGENTS
                                                                                                                              Similarity
                                                                                                                                         1104;
  THE
                                                                                                                Query Match
Best Local S
Matches 1104
                                                                                                                                                                                            1099
                                                                                                                                                                                                                                               1159
                                                                                                                                                                                                                                                                                                 1219
                                                                                                                                                                                                                                                                                                                                                                                                     1339
                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1399 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1879
                                                                                                                                                                     н
                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1939
                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                         ORIGIN
                                                                                                                                                                                         B
                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                8 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             상 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                        \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \dot{\delta}
                                                                                                    1518
                                                                                                                                                                                                          1638
                                                                                                                                                                                                                                                                                                                                                                1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2118
                                                                                                                                                    1519 TAGCATGGAAAACAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1578
                                                                                                                                                                                                                                                           1698
                                                                                                                                                                                                                                                                                                                                                                                                                 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCAAACTGTATTCACTCAAACAAGATCTTCTATCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT 23-NOV-2002
  1339 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1398
                                                                                                                                                                                 540
                                                                                                                                                                                                                                 009
                                                                                                                                                                                                                                                                                    099
                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                           360
                                                                           420
                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                   AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccricicaaridecaacdrerracreaadaacadrecerrrrragrecarederrreada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGCAAACTGTATTCACTCAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2119 ccagaagacagaagcargccrgaraacrrrgccccggrgrrgggaraarrragrccaaaa
                                                                                                                              TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT
                                                                                                                                                                                 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                   GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                      CTCACTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                              TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                           TAATATTTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA
                                                    1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                      TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 44.11-APR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AX538624 11443 bp
Sequence 44 from Patent W00229056.
AX538624 GI:25271175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTIGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTIGAAAAGAGIACAGCACAGAIT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             synthetic construct
synthetic construct
artificial sequences.
                                                                                                     1459
                                                                                                                                                                                                                                                                                                                                                                                                                 1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081
                                                                             361
                                                                                                                                                                                                                                                                                                                                                              1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2179
                                                                                                                              421
                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                          301
                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SFINITION
CCESSION
SRSION
SYWORDS
CURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3SULT 5
(538624
```

```
1158
                                                                                                                                                                                                                                               1218
                                                                                                                                                                                                                                                                                                                                                1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1878
                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                               1279 TGCTGAGGACACATTGCAAGGACACAATGATTTCTAATGATGTGGAGAAGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGTTTCATACTCATGAGGGGTACATGATGGATTTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                   GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                      TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1519 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  geeretregacergaretregagaceraaaaceecaagracaacaraaaggeerea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATCGATGGCCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cerrereaareseaacsicrracisaasaacasiseerirrragiseareserreasa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACATGGTGGTGGTAGT
Length 11443;
                                                    ö
                                                    Indels
```

8 5 8 5 8 5

	ag vo		
GGGCAAACTGTATTCACTCAAACAAGATCTTCTTCAACACTGAAGAATAAGTCAGTGAC 1020 	-	— Ф	
108	8 %	541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA [ACATAAGGTGCTTCA 600 ACATAAGGTGCTTCA 1698
i	8 %	601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	ACATGGTGGTGGTAGT 660
1	è 8	661 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTTGGAAGAACAACTTAAGGTATTGG 	AACTTAAGGTATTGGG 720
AX538627 12057 bp DNA linear PAT 23-NOV-2002 Sequence 47 from Patent WO0229056.	B &	721 AGAICGAIGGGCAAACAICIGTAGAIGGACAGAAGACGCIGGGTICTITACAAGACA 	TTCTTTTACAAGACAT 780
construct	8 %	781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 	3TGCATGGCTTTCAGA 840
erlain, J.S. and Harper, S.Q. Aystrophin nucleic acid and peptide sequences	& 8	841 AAAAGAAGATGCAGTGAACAAGATTCACACACACTGGCTTTAAAGATCAAAATGAAATGTT 	ATCAAAATGAAATGTT 900 ATCAAATGAAATGTT 1998
', ICHIG	· & 8	901 ATCAAGTCTTCAAAAACTGGCGGTTTTAAAAGGGGATCTAGAAAAGAAAAAAACAATCCAT 	AGAAAAGCAATCCAT 960 AGAAAAGCAATCCAT 2058
<pre>/ organism="gynthetic construct" /mol_type="unassigned DNA" /db_xref="taxon:25630" /note="Synthetic"</pre>	& 8 -	961 GGGCAAACTGTATTCACTCAAACAAGATCTTTTTTCAACACTGAAGAATAAGTCAGTGAC 	GBATAAGTCAGTGAC 1020 GBATAAGTCAGTGAC 2118
Duery Match 52.5%; Score 1103.4; DB 6; Length 12057; Best Local Similarity 99.9%; Pred. No. 4.1e-251; Matches 1104; Conservative 0; Mismatches 1; Indels 0; Gaps 0;	VQ da	CCAGAAGACGGAAGCATGGCTGGATAACTTTGC 	CCGGTGTTGGGATAATTTAGTCCAAAA 1080
acaggctgcttatgtca acaggctgcttatgtca	y da	1081 ACTTGAAAGAGTACAGCACAACT 1105 	
TCCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTTIGGCAGTTCATIGATGGAGAG 120 	RESULT 7 AX409637 LOCUS	AX409637	ear PAT 14-JUN-2002
TGRAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180 	ACCES VERSI KEYWO	N.	٠.
4	SOURCE	Homo sapiens (human) Homo sapiens Eukaryota, Metazoa, Chordata, Craniata, Ve	rata; Buteleostomi;
19CICAGGACACATIGCAAGCACAAGGATIICIAAIGAIGIGGGAAGIGGIGGIGAAAGA 1338 CCAGTTTCATACTCATGAGGGGTACATGATGAATTTGACACCCCATCAGGGCCGGGTTGG 300 	REFERENCE AUTHORS TITLE JOURNAL	Nammalla; Eucheria; Frimaces; Cacairnini; Alvares,C., Horne,D., Peres-da-Silva,S. an Gene expression profiles in liver cancer Patent: WO 0229103-A 2284 11-APR-2002;	nominitate; nomo. nd Vockley,J.G.
TAATATTICTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	FEATURES	H C 0	
aactgaagtacaagaggagatgaatctcctaaattcaagatgggaatgcctcagggagg 420 	ORIGIN	/mol_type="unassigned_DNA" /db_xref="taxon:9606" /noTe="EMBL/GenBank Accession No. M18	533 "
TAGCATGGAAAAACAAAGCAATTTAACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480	Query	Match 52.5%; Score 1103.4; DB 6;	Length 13957;
	,		

Db 2119 CCAGAAGACGGAAGCATGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178 Qy 1081 ACTTGAAAAGAGTACAGCACAGACT 1105 Db 2179 ACTTGAAAAGAGTACAGCACAGATT 2203	RESULT 8 AX538581 LOCUS LOCUS DEFINITION Sequence 1 from Patent WO0229056. ACCESSION AX538581 VERSION AX538581.1 GI:25271086	α as	TITLE Mini-dystrophin nucleic acid and peptide sequences JOURNAL Patent: WO 0229056-A 1 11-APR-2002; FEATURES Location/Qualifiers Source //organism=Homo sapiens" //nol brown appiens	ORIGIN Query Match Best Local Similarity 99.9%; Pred. No. 4.1e-251; Matches 1104; Conservative 0; Mismatches 1; Indels 0; Gaps 0;	ACCCTACACG	61 ICCTICACAGCATTIGGAAGCICCTGAAGACAAGTCATTIGGCAGTTCATTGAIGGAGAG 1159 ICCTICACAGCATTIGGAAGCICCTGAAGACAAGTCATTIGGCAGTTCATTGAAGAGAG	OY 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATGCTGGGTTTCTTTC		Db 1339 CCAGTITCAIACICAIGAGGGGTACAIGAIGGAITTGACAGCCCAICAGGCCGGGTIGG 1398 Qy 301 TAAIAITCIACAAITGGGAAGTAAGCTGAITGGAACAGGAAAAITAICAGAAGAIGAAGA 360	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGG	OY 421 TAGCATGGAAAAACAATTTAGATAGGAGTTTTAATTGATGAGTTTTAATGATGA	1579 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAAGAA	Db 1639 GCCTCTTGGACCTGATCTTGAAGCCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698
st Local Similarity 99.9%; Pred. No. 4.1e-251; tches 1104; Conservative 0; Mismatches 1; Indels 0; Gaps 0; 1 GAGCTATGCCTACACACACGTGCTTATGTCACCACTCTGACCCTACACGGAGCCCATT 60	61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120	TGCTGAGGACACATTGCAAGGACAAGGAGATTTCTAATGATGTGGAAGGATGAAAGA	1339 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACACCCCATCAGGGCCGGGTTGG 1398 301 TAATATTCTACAATTGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGAAGATGAAGA 360 1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458	AACTGAAGTACAAGAGCAGATCAATCTCCTAAATTCAAGATGGGAATGCCT(1519 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1578 481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAAGAACAACAAAGAAATGAGGAAGA 540	GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA 		661 TGATGAAFCTAGGGAGATCACGCAACTGCTGTGGAAGAACAACTTAAGGTAFTGGG 720	1819 AGATCGATGGCAAACATCTGTAGATGGACAGAGAACCGCTGGGTTCTTTACAAGACAT 1878 781 CCTTCCAAATGGCAACGTCTTACTGAAGAACAGCGCTTTTTAGTGGATGGCTTTCAGA 840 1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA 840 1879 CCTTCTCAAATGGCAACGTCTTACTAGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA 1938	841 AAAAGAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAAGATCAAAATGAAATGTT 900 	901 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAAAA	961 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020 	1021 CCAGAAGACGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080

```
gene
                                                                                                                                                                                                                                                                                    CDS
                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Koenig, M., Hoffman, E.P., Bertelson, C.J., Monaco, A.P., Feener, C. and Mintel, L.M.
Complete cloning of the Duchenne muscular dystrophy (DMD) cDNA and preliminary genomic organization of the DND gene in normal and affected individuals
Cell 50 (3), 509-517 (1987)
                                    1758
                                                                                                                                                                            1878
                                                                                                                                                                                                                                                                                                                        1998
                                                                                                                                                                                                                                                                                                                                                                                             2058
                                                                                                                                                                                                                                                                                                                                                                                                                               961 GGGCAAACTGTATTCACTCAAACAAGATCTTTCTATCAACAACAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRI 25-MAY-2000
                                                                        720
                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                          096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bukaryoča, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 1699)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1678 to 3830)
Hoffman, E.P., Monaco, A.P., Feener, C.C. and Kunkel, L.M.
Conservation of the Duchenne muscular dystrophy gene in mice and
                      TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                            1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTTAGTGCATGCCTTTTCAGA
                                                                                                                                                                                                                                                                                                                   1939 AAAAGAAGATGCAGTGAACAAGATTCACACCAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                           1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAGAAAAGAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACCACATGGTGGTAGT
                                                                                                                                        721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                              CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                  901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Koenig,M., Monaco,A.P. and Kunkel,L.M.
The complete sequence of dystrophin predicts a rod-shaped cytoskeletal protein
Cell 53 (2), 219-226 (1988)
88194521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3282674
On May 25, 2000 this sequence version replaced gi:340693.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HUMDYS 13957 bp mRNA linear Homo sapiens dystrophin (DMD) mRNA, complete cds. M18533 M17154 M18026 M20250 M18533.1 GI:181856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science 238 (4825), 347-350 (1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081 ACTIGAAAAGAGIACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2179 ACTTGAAAGAGTACAGCACAGATT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 13957)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88018015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3607877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Summur
                                                                    661
                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                            셤
                                                                  \stackrel{>}{\circ}
                                                                                                    음
                                                                                                                                                                        셤
                                                                                                                                                                                                            ਨੇ
                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쇥
à
                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋧
```

```
CONTRIBUTED TO THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET OF THE SET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TREVOSTREDIA LEGATORIA DE LA CONTROLLA DE LA CONTROLLA DE LE LE REVOSTREDIA CANTROLLA DE LA CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLLA DEL CONTROLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TSWSDGLALNALIHSHRPDLFDWNSVVCQQSATQRLEHAFNIARYQLGIEKLLDPEDV
DTTYPDKKSILMYITSLFQVLPQQVSIEAIQEVEMLPRPPKVTKEEHFQLHHQMHYSQ
QITVSLAQGYERTSSPKPRFKSYAYTQAAYVTTSDPTRSPFPSQHLEAPEDKSFGSSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MLWWEEVEDCYEREDVOKKTFTKWVNAOFSKFGKQHIENLFSDL
}DGRRLLDDLLEGLTGQKLPKEKGSTRVHALNNVNKALRVLQNNNVDLVNIGSTDIVDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GQARAKLESWKEGPYTVDA TOKKI TETKOLAKDLEÖMTUTUVANDLALKLIEDYSAD
DTRKVHMI TENI NASWRSI HKRVSERRAALEETHRILOQFPIDLEKTLAMLTEAETTA
NVLODATKERLLEDSKGYKELMKOMDLOGETEAHTDVHNDENSOKI IRSLEGSD
DVLLORRIDDNANFWELKKSI NI RSHLEASSDOWKRIHLSLOELLVWLOLKDDEL
SROAPIGGDPAVOKONDVHRAPKRELKIKEPVI MSTLETVRI FLTEQPLEKLYO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mbsevnldryqtalbevlswilsaedtlqaqgeisndvevykdoffthegymmdltah
Qgrvcnilolgskligtgklsedeetevoeqmnlinsrweclrvasmekosnihrvlm
Draft entry and computer-readable sequence kindly provided by M.Koenig, 01-APR-1988 The severity of muscular dystrophy is determined by the size of the deleted DNA segment. Deletions found in different patients were from positions 302-2200, 473-1168, 1691-1810, and 1169-3011.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NEIGÄKTTERKOOLEKCLKLSRKMRKEMNVITTÄÄLAÄTDMELTKRSAVEGMPSNLDSE
VAMGKATOKEIEKOKVHLKSITEVGEALKTVLGKKETLVEDKLSLLNSNMIAVTSRAE
EMINLLLEYOKHMETFDONVDHITKMIIQADTLLDESEKKKPQOKEDVLKRLKAELND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NHKLTLGLIWNIILHWQVKNVMKNIMAGLQQTNSEKILLSWVRQSTRNYPQVNVINFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDLAPCLTTICAS PTOTVTLVTOPVVTKETAIS KLEMPSSLMLEVPALADFNRAWT
IDDLASLLDQVIKSQRVMVGDLEDINEM I KQRATMQDLEQRR PQLESLI TAAQNLK
(TSNQEARTI I TDRIERI QNQMDEVQEHLQNRRQQLNEMLKDSTQWLEAKEBAEQVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /protein_id="AAA53189.1"
/db_xref="G1:181857"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /map="Xp21.3-p21.1"
/tissue type="muscle"
/dev_stage="fetus"
/note="G00-119-850"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
product="dystrophin"
                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="DMD"
209. .11266
/gene="DMD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .13957
```

1158 1278 1218 recreaceacacarrecaaceacaaceacaacaarrrrcraarcaaceaacreaaaca 1338 TAGCATGGAAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1578 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698 420 480 540 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878 120 180 240 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA 600 TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 780 781 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 840 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC Gaps Length 13957; 1; Indels Score 1103.4; DB 9; Pred. No. 4.1e-251; 0; Mismatches 1; 52.5%; 99.9%; Conservative Query Match Best Local Similarity Matches 1104; Conserv 61 121 1279 1339 301 361 1459 1519 1579 1639 1699 661 1759 181 241 421 481 541 601 721 RIGIN

	18	79 CCTICTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGGCTTTCAGA 1938
	6 8	41
	9D 19	939 AAAAGAAGGATGGAGTAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1998
	Qy 9	901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAAAA
	Db 19	999 ATCAAGTCTTCAAAAACTGGCCGTTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT 2058
	,	1 GGGCAAACTGTATTCACTCAAACAAGATCTTTTCAACACTGAAGAATAAGTCAGTGAC 102
	Db 205	a
		1 CCAGAAGACGGAAGCATGGATGACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 108
		on.
	02 108	81 ACTTGAAAAGAGTACAGCACAGACT 1105
	Db 217	O
	RESULT 10	
	LOCUS	AR220819 13977 bp DNA linear PAT 26-SEP-2002 Sequence 60 from patent US 6426186.
	VERSION VEVENDED	AK220819.1 GI:23327696
	SOURCE	Unknown. Unknown.
		Unclassified. 1 (bases 1 to 13977) The sease 1 to 13977)
	TITLE	002;
	•	Location/Qualifi 113977 /organism="unkno
	ORIGIN	/mol_type="genomic DNA"
	Query Mat	Query Match 52.5%; Score 1103.4; DB 6; Length 13977;
	Matches 1) Fred. NO. 4.16-231 0; Mismatches 1
	λŏ	1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCCTCTGACCCTACACGGAGCCCATT 60
	DP 10	099 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGCACCGAGGCCCATT 1158
•	ò	61 TCCTTCACAGCATTTGGAAGGTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG 120
	Db 11	29
	0y	21 IGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
	Db 12	1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1278
	0γ 1	181 IGCIGAGGACACATIGCAAGCACAAGGAGAGATITCIAATGATGTGGAAAGTGGTGAAAGA 240
	Db 12	1279 TGCTGAGGACACATTGCAAGGACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAGA 1338
	<u>0</u> γ 2	241 CCAGTTTCATACTCATGAGGGGTACATGAATGATTGACAGGCCCATCAGGGCCCGGGTTGG 300
	Db 1339	σ.
	Qy	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAGATGAAGA 360
	Db 13	Q)
	97	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420

ů

Direct Submission
Submitted (109-FBB-1989) Rosenthal A., Akademie der Wissenschaften der Dbr, Zentralinstitut fuer Molekularbiologie, Robert-Roessle Str. 10, 11.15 Berlin Buch, DDR see also M1853 and M20250 for Dmd seqs.; discrepancies compared t M18533 cDNA were located at x14298 pos. 495, 1772, 1965, 2449, Location/Qualifiers

/codon_start=1 /protein_id="CA32479.1" /db_xref="G1:30846" /db_xref="GOA:P11532" /db_xref="GOA:PROT:P11532" /translation="MLWWEEVEDCYEREDVQKKTFTKWVNAQFSKFGKQHIENLFSDL

/note="unnamed protein product; dystrophin (AA 1 - 3685)"

/organism="Homo sapiens"
non_type="mRNA"
db_xref="taxon:9606"
/chromosome="X chromosomal, xp21."

/tissue type="muscle" /dev stage="fetal and adult. 99. .11156

QDGRRLLDLLEGLTGQKLPKEKGSTRVHALMNVNKALRVLQNNNVDLVNIGSTDIVDG NHKLTLGLIWNIILHWQVKNVMKNIMAGLQPTNSEKILLSWVRQSTRNYPQVNVINFT TSWSDGLALNALIHSHRPDLFDWNSVVCQQSATQRLEHAFNIARYQLGIEKLLDPBDV

DTTYPDKKSILMYITSLFQVLPQQVSIBAIQEVEMLPRPPRVTKEEHFQLHHQMHVSQ QITVSLAQCYERTSSPKPRKSYAYTQAAYVTTSDPTRSPPRSQHLEAPEDKSFGSSL MESEVNLDRYQTALEEVLSWLLSAEDTLQAQCEISNDVEVVKDQFHTHEGYMMDITAH QGRVGNYILQLGSKLLGTGKLSBDEETEVQEQMILLNSRWECLRVASMEKQSNLHRYLM DLQNQKLKELNDWLTKTEERTRKMEEEPLGPDLEDLKRQVQQHKVLQEDLEQEQVRVN

SLTHMVVVVDESSGDHATAALEEQLKVLGDRWANICRWTEDRWVLLGDILLKWQRLTE GOCTSGAWLAKADIEKKGOMGKLYSIK QDLLSTLKNKSVYQRTEAWLDNFARCWDNLVQKLEKSTAQISGAVTTQPSLTQTTVM ETVTTVTTREQILVKHAQEELPPPPPQKKRQITVDSEIRKRLDVDITELHSWITRSEA

g ≿ გ አ Я ⋧ д ⋧ સ ⋩ Я ⋩ ă ⋧ ď ጵ ď ⋩ ď ≳ ત્ ⋩ બ્ ≈ ð

```
source
  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                         FEATURES
                                                                                       COMMENT
                                                                                                                                                                                                 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1939 AAAAGAAGAAGAAGAACAAGAATTCACACAACTGGCTTTAAAGATCAAAATGAAAATGTT 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1080
                     1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518
                                                                                                       1519 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 1578
                                                                                                                                                                                                                                                                                 1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698
                                                                                                                                                                                                                                                                                                                                                                      AGAAGAICTAGAACAAGAACAAGICAAGGICAATICICICACICACAIGGIGGIAGI 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1879 ccrircroaargccaacgrcrracreaagaacagcgccrrrrragrgcargccrrrcaga 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGCAAACTGTATTCACTCAAACAAGATCTTCTATCAACACTGAAGAATAAGTCAGTGAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2059 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRI 12-SEP-1993
                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATCGATCGCCAAACATCTGTAGATGGACAGAAGACGCTGCGTTCTTTTACAAGACAT 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1759 TGATGAATCTAGTGGAGATCACGCAACTGCTCTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                          GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                               421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                    GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1021 CCAGAAGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
X14228.1 GI:30845
Dmd gene; Duchenne muscular dystrophy; dystrophin.
Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12446 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human mRNA for dystrophin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   X14298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSDMDR
                                                                                                                                                                                                                                                                                                                                                                           1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                    481
                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOCUS
DEFINITION
ACCESSION
FERSION
CEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
```

```
KQCRLLVSDIOTIQPELNSVNEGGYKKNEAEPEFASRLETELKELNTQWDHMCQQVY
ARKEALKGGLEKTVSLQCDLSEMHEWNTQAEEEFYLERDFEYKTPDELGKAFEENKRAK
ERAQQKEAKVKLLTESVNSV1AQAPDAKKELETLTTNYQWLCTRLNGKCKTLE
EVWACWHELLSYLEKNKWLNEVEFKLKTTENIPGGAEEISEVLDSLENLMRHSENDN
NQIRILAQTLTDGGVMDELINEELETPNSRWRELHEEAVRQKLLEGSIQSAQETENS
LIHLOBSLTETDKQLAAYIADKVDAAQMPQEAQKIQSIQSAGTENS
LIHLOBSLTETDKQLAAYIADKVDAAQMPQEAQKIQSSKAILDEVKWHLDFALFTKSVE
QEVVQSQLNHCVNLYKSLSEVKSEEVENNIKTGRQIVQKKQTENPRELDERVYHLLELKSVE
QEVVQSQLNHCVNLYKSLSEVKSEEVENJIKTGRQIVQKKQTENPRELDERVHLLALKLYN
NELGAKVTERKQQLEKCLKLSRKMRKEMNITTEWLAATDMELTKRSAVEGNESNIDSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VAMCKATOKEI EKOKYHLKSITEVGEALKTVLGKKETLVEDKLSLLNSNWIAVTSRAE
EWLNLLLEYOKHMETFDONVDHITKWIIQADTLLDESEKKKPQOKEDVLKRLKAELND
IRPKVDSTRDQAANLMANHGDHCRKLVEPQISELNHRFAAISHRIKTGKASIPLKELE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PENWEHAKYKWYLKELQDGIGGRQTVVRTLNATGEEIIQGSSKTDASILQEKLGSLNIL
RWGEVCKQLSDRKKRLEEGKNILSEFQRDLNEFVLWLEEADNIASIPLEFGKEQQLKE
KLEOWYLLYGELPLRQGILKQLNETGGPVLNSAEISPERGDKLENKLKOYNLQW KVS
RALPEKQGILEAQIKOLGQLEKKLEDLEEQLNHLLLMLSPIRNGLEIYNQPNGEGFP
VKETEIAVQAKQPDVEEILGKGGHIYKEKPATQPVKRKLEDLSSEWKAVNRLLGELEA
KQPDLAPGLTTIGASPTQTVTLVTQPVVTKETAISKLEMPSSLMLEVPALADFNRAWT
VLOSPEFAIPRKEGNFSÜLKEKVNAIĒREKĀĒKFRKLQDASRSGGALVEGMYNEGVNA
DSIKQASEQLNSRWIEFCQLLSERLAWLEYGNNIIAFYNQLQQLEGMTTAENWLKIQ
PTTPSEFTAIKSQLKICKDEVNRLSGLAQPQIERLKIQSIALKEKGGEPMFLDADFVAF
TNHFQVFSDVQAREKELQITIEPTRYQETMSAIRTWQOSETKLSIPQLSVTDY
TIMPQRLGELQALQSSLQEQOSGLYTJSTTVXEMSKRARSEISRKXQSEPEZIEGRWK
KLSSQLVEHCQKLEEGMNKLRKIQNHIQTLKKWMAEVDVFLKEEWPALGDSEILKKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QFNSDIQKLLEPLEAEIQQGVNLKEEDFNKDMNEDNEGTVKELLQRGDNLQQRITDER
KSEEIKIKQQLLQTKHNALKDLRSQRRKKALEISHQWYQYKRQADDLLKCLDDIEKKL
ASLPEPRDERKIKEIDRELQKKKEELNAVRRQAEGLSEDGAAMAVEPTQIQLSKRWRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DAVILORRLDNAMFKWSELRKKSLNIRSHLEASSDQWKRLHLSLQELLVWLQLKDDEL
SRQAPIGGDFPAVQKQNDVHRAFKRELKTKEPVIMSTLETVRIFLTEQPLSGLSKLYQ
EPRELPPEERAQNVTRLLRKQAEEVNTEWEKLNLHSADWQRKIDETLERLQEATD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IESKFAQFRRINPAQIHTVREETMMWIEDMPIEISVPSTYLTEITHVSQALLEVEQ
LLNAPDLCAKDFEDLFKQEESLKNIKDSLQQSSGRIDIIHSKKTAALQSATFVERVKL
QBALSQLDFQWEKVNKMYKDRQCRFDRSVEKWRRFHYDIKIFNQWLTEAEQFLRKTQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELTDWLSLLDQVIKSQRVMVGDLEDINEMIIKQKATMQDLEQRRPQLEELITAAQNLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NVLQDATRKERLLEDSKGVKELMKQWQDLQGEIBAHTDVYHNLDENSQKILRSLEGSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DTRKVHMITENINASWRSIHKRVSEREAALEETHRLLQQFPLDLEKFLAWLTEAETTA
```

Two human cDNA molecules coding for the Duchenne muscular dystrophy (DMD) locus are highly homologous Nucleic Acids Res. 17 (13), 5391 (1989) 89345106

2 (bases 1 to 12446) Rosenthal, A.

266883

MEDLINE PUBMED REFERENCE AUTHORS

JOURNAL TITLE

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia! Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 12446)
Rosenthal_A., Speer,A., Billwitz,H., Cross,G.S., Forrest,S.M. and

REFERENCE AUTHORS

Db 1769 CCTGCTCAAATGGCAACGTCTTACTGAAGAACGG Oy 841 AAAGAAGATGCAGTGAACAACTC Db 1829 AAAGAAGATGCAGTGAACAACACACTC Oy 901 ATCAAGTCTTCAAAAACTGGCGTTTTAAAAGCG Oy 91CAAGTCTTCAAAACTGGCGTTTTAAAAGCG Oy 961 GGGCAAACTGTATTCACTCAAACAGATTTTAAAAGCGC Oy 961 GGGCAAACTGTATTCACTCAAACAACATTTTATTAAAGCGC Oy 961 GGGCAAACTGTATTCACTCAAACAACATTTTTTTTTTTT	Qy 1021 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCC Db 2009 CCAGAAGACGAAGCATGGCTGGATAACTTTGCCC Qy 1081 ACTTGAAAAGAGTACAGCAGACT 1105 Db 2069 ACTTGAAAAGAGTACAGCAGACT 1205	RESULT 12 AX538620 LOCUS LOCUS SEQUENCE 40 from Patent W00229056. ACCESSION AX538620 VERSION AX538620 XEYWORDS SOURCE ORGANISM SYNTHetic construct ORGANISM SYNthetic construct ATTHERMACE ATTHISM	AUTHORS Chamberlain, J.S. and Harper, S.Q. TITLE Mini-dystrophin nucleic acid and pep JOURNAL PATENT: WO 0229056-A 40 11-APR-2002; THE REGENTS OF THE UNIVERSITY OF MICI FEATURES 1. 5339 Ource 1.5339 Nocanism="synthetic constru/mol_type="unassigned DNA" /mol_type="unassigned DNA" /db_xref="taxon:32630"	Query Match Best Local S Matches 997 1105	Db 1225 CTCCAAGGAGTAAAAGGCTGATGAGGATGCTJACAGGATGCTJACAGGATGCTJACAGGATGAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGCTGATGAAAAAAGGTCAAAAAAAGGATAAAAAAGGATGAAAAAAGGTCCTGATAAAAAAGGTCCTGAAAAAAAGGTCCTGAAAAAAAGGTCCTGAAAAAAAGGTCCTGAAAAAAAGGTCCTGAAAAAAGGTCCTGAAAAAAGGTCCCTGAAAAAAAGGTCCTGAAAAAAGGTCCCTGTAAAAAAGGTCCCGAAAAAAGGTCCTGAAAAAAGGTCCCTGTAAAAAAGGTCCCGAAAAAAGGTCCCTGTAAAAAAGGTCCCGAAAAAAGGTCCCGAAAAAAGGTCCCTGTAAAAAAGGTCCCCAAATAAGGTCCCCAAATAAGGTCCCCAAAATAAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAATAAGGTCCCCAAAAAAAGTCCTCCAACATTAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAGGTCCCAACAATAAAAAAAA
ELDLKLRQAEVIKGSWQPVGDLIDSLQDHLEKVKALRGEIAPLKENVSHVNDLARQL TTLGIQLSPYNLGTLEDLNTRWCLLQYAVEDRYRQLHEAHRPFGPASQHFLSTSVQGP WERALSPRKYPYYINHETYGTTGWHDFROTTELT YOSLADLNNTRFSAYTAMCHRELQKA LCLDLLSLSLSAACDALDQHNLKQNDQPRDILQIINCLTTINTRLEGEHNNLWNYPLCVD MCLNWLLNYYDTGRTGRLRYLSFYGTISLCKAHLEDKYRTLEKQYASSTGFCORRL GILLHDSLQIPRQLESTVASFGSNIEBSVRSCFQFANNKPIERQALFLDWRLEPQSM VWLPVLHRVAAETTAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFSGRVAKGH KWHPVHRVBAPASSPQLSHDDTHSKIERTRKYFRAHPRMGYLFVQTVLEGDNNET PYTLINWFPVDSAPSSPQLSHDDTHSKIERIRKYRYFRAHPRMGYLFVQTVLEGDNNET DEHLLIQHYCQSLNQDSPLSQPRSPAQLIISLESERGELERILADLESENRULQABY DEHLLIQHYCQSLNQDSPLSQPRSPAQLIISLESERGELERILADLESENRULQABY DRIKQQHSHKGLSPLSPPPRMMYTSPQSPRDAELIRBAKLLARQHKGRLEARNQILEDH NKQLESQLHRLRQLLEQPQARAKVNGTTVSSPSTSLGRSDSQPMLLRVGSQTSDSM GEEDLLSSPQDTSTGLEEVMSQLNNSFPSSRGRNTPGKPRREDTM"	Ouery Match 52.4%; Score 1100.2; DB 9; Length 12446; Best Local Similarity 99.7%; Pred. No. 2.4e-250; Matches 1102; Conservative 0; Mismatches 3; Indels 0; Gaps 0; Y I GAGCTATGCCTACACACAGGCTTATGTCCACACCTCTGACCCTACACGGAGCCCATT 60 989 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACAGGAGCCCATT 1048	TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGG 120	241 CCAGTITCATACTCATGAGGGTACATGATGGATTGACAGCCCATCAGGGCCGGGTTGG 1229 CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTTGG 301 TAATATCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGGAAGA 1289 TAATATCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1289 TAATATCTACAAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAAGATGAAGA 361 AACTGAAGTACAAAGGAAGAATCACTCCTAAATTCAAGAAAATTGCAGGAATGCCTCAGGGTAGC	1349 AACTGAAGTACAAGGAATCTACATAGATCAAGATGGGAATGCCTCAGGGTAGC 1408	S41 GCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACATAAGCTGCTTCA 600

	op , qa	769 CCTGCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1828
0	ò	841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 900
Α	Db 1	829 AAAAGAAGGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1888
O	δ	901 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAGAAAAAAAA
	1 20	889 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAAAA
O	γ̈́	961 GGGGAAACHGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1020
Α	Db 1	1949 GGGCAAACTGTATTCAATCAAACAAGATCTTCTATCAACACTGAAGAATAAGTCAGTGAC 2008
o	Oy 1	1021 CCAGAAGACGGAAGCAIGGCIGGAIAACTITIGCCCGGIGTIGGGAIAAITITAGICCAAAA 1080
Δ	Db 2	2009 ccagaagacggaagcaiggciggaiaacringcccggigrigggaiaarraarccaaaa 2068
····		1 ACTTGAAAAGAGTACAGCACAGACT 110
	DD 2	2069 ACTTGAAAAGAGTACAGCAGATT 2093
POEPA	RESULT 12 AX538620 LOCUS DEFINITION ACCESSION	AX538620 5339 bp DNA linear PAT 23-NOV-2002 Sequence 40 from Patent W00229056.
> × 0	VERSION KEYWORDS SOURCE	
	ORGANISM	synthetic construct artificial sequences.
24	REFERENCE AUTHORS TITLE JOURNAL	Chamberlain, J. S. and Harper, S.Q. Mini-dystrophin nucleic acid and peptide sequences Patent: WO 0229055-A 40 11-APP-2002. The negation of the institution of the contraction of the co
[24	FEATURES	
) 	/organism="synthetic construct" /mol_type="unassigned DNA" /db xref="texon:32630" /note="synthetic"
0	ORIGIN	י זוכרמין באזוריים רוכי
	Query Match Best Local S Matches 997	cch al Similarity 100.0%; Pred. No. 7.8e-226; 997; Conservative 0; Mismatches 0; Indels. 0; Gaps 0;
Ø	Qy 1	1105 TCATAGATTACTGCAACAGTTCCCCCTGGAACTTGCTTGC
Ω	Db 1.	1546 icaradarracidedacadriceeeriddaeergaaaagrirerrgeerggerracaga 1605
α 	Qy 1	1165 AGCIGAAACAACTGCCAAIGICCTACAGGAIGCTACCGTAAGGAAAGGCTCCTAGAAGA 1224
Δ	Db 1	1606 Addricaaacaacreccaarerecracadaarecraceeraagaaaagacrecracaaaga 1665
α	ογ 1	1225 CTCCAAGGGAGTAAAAGACCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 1284
Δ	Db 1	1666 ctccaagggagtaaaaggctgatgaaacaatggcaagactccaaggtgaaattgaagc 1725
о 	2,	1285 TCACACAGATGTTTATCACAACCTGGATGAAACAGCCAAAAATCCTGAGATCCCTGGA 1344
Δ	Db 1	1726 TCACACAGATGTTTATCACAACCTGGATGAAACAGCCAAAAAATCCTGAGATCCCTGGA 1785
0	ογ 11	1345 AGGITCCGAIGAIGCAGICCIGITACAAAGACGIIIGGAIAACAIGAACIICAAGIGGAG 1404
Δ	Dib 1.	1786 AGGTICCGAIGAIGAGCCTGTIACAAAGACGTTIGGAIAACATGAACTTCAAGIGGAG 1845
o	ο _γ 1	1405 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 1464
<u> </u>	Db 1	1846 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 1905

```
PROTOCOSTON

APOTO465

PAPOTO465

APOTO466 I. GI.1980750

GGGANISH

ANTHORY Canis familiaris (dog)

GGGANISH

Canis familiaris (dog)

GGGANISH

ANTHORY CANIS FAREST CONTRACTS CANISTS, VERTEBRISH ENDISOROMY,

ANTHORY CANIS FAMILIARIS (ANTHUVARIA) FERREPÉSS, ANTHURON S.D.

ANTHORY CANIS FAMILIARIS (ANTHUVARIA) FERREPÉSS, ANTHURON S.D.

ANTHORY CANIS FAMILIARIS (ANTHUVARIA) FERREPÉSS, ANTHURON S.D.

DISCOLOR CANIS FAMILIARIS (ANTHUVARIA) FERREPÉSS, ANTHURON S.D.

INCOLOR SANTONION CONTRACTOR (ANTHURON CONTRACTOR MAILTON) S.D.

LOCATION (ANALIS FAMILIARIS CANIS FAMILIARIS S.D.

LOCATION (ANALIS FAMILIARIS CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS FAMILIARIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS FAMILIARIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS FAMILIARIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.

ANTHUR CANIS FAMILIARIS S.D.
```

LSLLDRVIKSORVMVGDLEDINEMIIKOKATLODLEORRPQLEELITAAQNIKNKTSN OEARTIITDRIERIOSQWDEVQEHLONRRLQLTEMLKDSTQWLEAKEBAEQVLGQARA KLESKREAPYTVDAIOKKITETKQLAKOLROWOTNVDVANDLALKLLEDYSADDTRKV HMITRINIASWASIHKRLEDS ATHKRELLEOSKGYRELMKOWODLOGSIEAHTDIYHNLDENGOKVLRSLEGSDDAALL ORRLDNMNFKWSELRKKSLNIRSHLEASSDQWKRLHISLQGELLVWLQLKDDELSRQAP

```
IGGDPPAVQKQNDVHRAFKBELKTXEPVIMSTLETVRIFLTEQPLEGLEKLYQEPREL
PPRERAGNVTRLILEKQAEENVYGEKLINGALAGMOKTLICHDEALEKLQELGGATDELDLK
LRQAEVIKGSKOPYGDLILDSLQDHLEKVKALBAGMOKTLDBALEKLGELGGATDELDLK
LRQAEVIKGSKOPYGDLILDSLQDHLEKVKALBGETPELKENVSYVNDLARQITTLGI
GLSPYNLNTIEBLNTFWKLLQYAIBDSIRQIHEAHRDFGFASQHFLSTSVQGPWERAI
SPINKYPYYIHHETDTOTTCWDHFPKTELYGSLADINNYRSSAFRTAMKERLEGKALCLDL
LSLSAACDALDQHNIKQNDOPMDILGVOVINCLTTIYDRLEGEHNNLYNVPLCVUNCLINW
LLNVYDTGRTGRIRVLSFKTGIISLCKAHLEDKYRYLPKQVASSTGFCDQRLGILLH
DSIQLYRASFGGSNIESPYSCFFANNKPETEAALFLUMMALLEDGWYWLPY
NHYNAAETAKHQAKNICTCECPIIGFRYBELKHFRYDICGSCFFSGRVAKGHRYPYP
NWEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRYDICGSCFFSGRVAKGHRYPYP
NWEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRYDICGSCFFSGRVAKGHRYPYP
NWEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRYDICGSCFFSGRVAKGHRYPYP
NWEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRYDICGSCFFSGRVAKGHRYPYP
OHHYNAAETARGDEGORAEAKVNGTTVSSPRTGLERINIAGHLEGDRAEARNQILEDHNKQLE
SQLHHDALLALLEGORAAEARNGTVSSPRTGLISERREGERRILADLGGRRRNRYGAESDL
LSPPQDTSTGLEBVNGQLNHSFPSSRGRNTPGKRWREDTM"

/ TPL_LYPG=LANGEM

/ TPL_LYPG=LANGEM

/ TPL_LYPG=LANGEM

/ TPL_LUNIE = "Ca "
                                                                                                                                                                                                                                                                                                         1242
                                                                                                                                                                                                                                                                                                                                                     1302
                                                                                                                                                                                                                                                                                                                                                                                                1362
                                                                                                                                                                                                                                                                                                                                                                                                                                           1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1722
                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         999
                                                                                                                                                                                                                                                                                 TCCTTCACAGCALTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTICATIGAIGGAGGGGTCALTIGAIGAIGGAGGGGTCATTIGGAGAGAGAGAGAGTCATTIGGCAGGAGACATCTTGACAGAACTCCTGAAGACAAGTCATTIGGCCGGTCATIGACAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGATGAATCTAGTGGGGACCATGCAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                              .;
0
                                                                                                                                                                                                                                      Query Match 44.2%; Score 929; DB 4; Length 13887; Best Local Similarity 90.0%; Pred. No. 1.1e-209; Matches 995; Conservative 0; Mismatches 110; Indels 0;
                                                                                                                                                                     3'UTR
repeat_region
                                                                                                                                                                                                                                                                                                           1183 (
                                                                                                                                                                                                                                                                                                                                                      1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1723
                                                                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                            장. 쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 & 8
                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                           \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                           성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               상염
```

```
1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1755 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                          1335
                                                                 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                  1455
                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
1155
                                 121
                                                                                                     181
                                                                                                                                    1275
                                                                                                                                                                        241
                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search compi
                                                                                                                                                                                                                                                                                                     $ B $ B $ B $ B $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ठ हे ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                          ò
                                                         g
                                                                                         8 B 8
                                                                                                                                                                                                g
                                                                                                                                                                                                                                장염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unidentified
unclassified.

unclassified.

1 (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1) (August 1)
                                                                                                                                                                        2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT 18-JUN-2001
                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
780
                                                                                               .963 CCTCCTAAAATGGCAGCGTTTTACTGAAGAACAGTGCCTTTTTTAGTGCCATGCCTTTTCGGA
                                                                                                                                                              GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                       CCAGAAGAGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                       2203 CCACAAGATGGAAGCATGGCTGGACAACTTTGCCCAGCGCTGGGATAATTTAGTCCAGAA
                      1903 AGATCGAIGGGCAAACATCIGTAGGIGGACAGAAGAICGCIGGGIICITITACAAGAACAI
                                                                                                                                                                                                           2083 ATCAAATCTTCAGAAACTGGCTGTCTTAAAAACAGATCTGGAAAAGAAGAAGCAAACCAT
AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                   CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                        841 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 4402;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ce 1. .4402
/organism='Unidentified'
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 99.6%; Pred. No. 1.5e-205; 4; Conservative 0; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA

    .4402
    /organism="unidentified"
    /mol_type="genomic DNA"
    /db_xref="taxon:32644"

                                                                                                                                                                                                                                                                                                                                                                                                                         ACTIGAAAAGAGTACAGCACAGACT 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTIGAAAAAGTICAGCACAGAIT 2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ďq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E30220.1 GI:13017027
JP 1999318467-A/3.
unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shortened dystrophin.
E30220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Simil
Matches 914;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1095
                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      М
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                   781
                                                                                                                                                                                                           901
721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
ACCESSION
VERSION
VERVORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
E30220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                          Я
                                                                                                 g
                                                                                                                                                                    g
                                                                                                                                                                                                          à
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                             ਨ੍ਹ
                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
ਨੇ
                                                                 à
                                                                                                                                 ₹
```

```
1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1934
                                                                                                                                                                                                                                      1394
                                                                                                                                                                                                                                                                                                                                                                                                      1514
                                                                                                                                                                                                                                                                                                                        1454
                                                                           1274
                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                    240
                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rgargaarcragagarcacgcaacrgcrrcrrrrggaagaacaacrraaggrarrggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .935 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                           AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1515 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT
TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                    CCAGTITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAGAAGAIGCAGIGAACAAGAITCACACAACIGGCITIAAAGAICAAAAIGAAATGIT
                                                                TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                    CCAGITICAIACICAIGAGGGGTACAIGAIGGAITIGACAGCCCAICAGGGCCGGGITGG
                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                               AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5, 2004, 02:39:35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Archaercreadandr 2012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAGTCTTCAAAACT 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     completed: April
```

```
332.6
3322.6
3322.6
2569.8
2569.8
2569.8
2569.8
2569.8
2569.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
2669.8
266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1101
166998
166992
166992
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
16666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
16666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
166666
16666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
BC03610
LOCUS
DEFINIT
                                                                                                                          ACCES
VERSI
KEYWO
SOURC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFER
AUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  υυ
                                                                                                                                                                               April 4, 2004, 16:52:43 ; Search time 2799.18 Seconds (without alignments) 17079.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                        1 gagetatgeetacacacagg......taccagtetttagetgacet 1601
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27513289 segs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                   US-09-845-416-14_COPY_900_2500
1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                       nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_est4::*
gb_est4::*
gb_est4::*
em_estfb...*
em_gss_bl...*
em_gss_bl...*
em_gss_pl...*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
em_gss_mun::*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inimum DB seq length: 0 aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estba::
em_esthum::
em_estin::
em_estin::
em_estin::
em_estil::
em_estil::
em_estil::
gb_esti::
gb_esti::
gb_esti::
                                                                                                                                                                                                                                                                                                                                       erfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                    coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             earched:
                                                                                                                                                                                                                                                                                                                                                                            equence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atabase
                                                                                                                                                                                      ё.
О
                                                                                                                                                                                      ä
                                                                                                                       Σ
```

CB228986 AGENCCURT
A7999454 Pan trog1
CB177816 is21-CO1.x
CB850319 MRA-0070
BC011062 Mus muscu
A7407022 Hous muscu
A7407022 Hous muscu
A7407022 Hous muscu
A7407023 Pan trog1
CF10978 Shultzomi
B1250598 60293859
CR56896 ANS muscu
CD56896 ANS muscu
B1250598 60395319
A7408546 Hous aspi
A7408548 Mus muscu
B125320 G03190772
B120010 UI-R-DKO-B124010
B135320 G03109063
B135320 G03109072
B1301659 G03109072
B1313510 G03409003
CCB28097 tigr-gss-B8817979 CM2-BN027
CB8113381 ANS muscu
BC36993 B0305E01-B13550 G0340903
A7408547 Pan trog1
B13550 G0340903
CD549993 B0305E01-B1364993 B0305E01-B1349936 B0105E01-B13460 UI-R-CHO-B14993

AY399454

AY399454

CBB177016

CBB7701062

AY407023

AY407023

CF109978

BISS0598

AX081426

BJ077239

CA377239

CA377239

CA377239

CA377239

CA377239

CB11308

BUJ04655

AY08544

BUJ055596

BUJ076339

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

CB218097

			ion		3C036103 Homo sapi	1K044536 Mus muscu	AY399453 Homo sapi	5 Mus muscu
			Description		BC03610	AK04453	AY39945	AY39945
SUMMARIES			ΠD		BC036103	AK044536	AY399453	AY399455
			В		11	1	53	53
			Match Length DB		3870	3056		
	de	Query	Match		68.1	53.4	52.1	38.8
			Score	1111111	1091	854.2	833.8	621
		esult	No.		m	7	m	4

LT 1 6103 8 BC036103 3870 bp mRNA linear HTC 19-NOV-2 1S
<u>.</u> 2

ALIGNMENTS

REMARK

JOURNAL

```
Mus musculus adult retina cDNA, RIKEN full-length enriched library, clone:A930019F21 product:dystrophin, muscular dystrophy, full insert sequence.
ARO44536 AKO44536.1 GI:26090404
HTC, CAP trapper.
                                                                                                                                                       1462
                                                                                                                                                                                                                                         1522
                                                                                                                                                                                                                                                                                                                            1582
                                                                                                                                                                                                                                                                                                                                                                                                                   1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2062
                                                                                                                                                                                                  479
                                                                                                                                                                                                                                                                                                                                                                       599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           959
                             360
                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (house mouse)
Mus musculus
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                       1343 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                              TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1883 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                       AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                  TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                              GCCTCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAAACTGTATTCACTCAAACAACAACTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccadaddaccdaddcardccredaraacrrrdccccccrcrrrdccaraarrrragrccaaaa
                                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                       GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATGAATCTAGTGGAGATCACGCAACTGCTTCGCAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1943 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAGAAGATGCAGTGAACAAGATTCACACCAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTIGADADAGAGTACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTTGAAAGAGTACAGCACAGA 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carninci, P. and Hayashizaki, Y
                                                                                                                                                                                                                                                                                                                                1523
                                                                                                                361
                                                                                                                                                         1403
                                                                                                                                                                                                  421
                                                                                                                                                                                                                                            1463
                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                   1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2123
                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
AK044536
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                           g
                                                                                                                                              셤
                                                                                                                                                                                                                                  D.
                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                          gg
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                  જે
                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                        Contact: MCC help desk

Email: cgapbs r@mail.nih.gov

Tissue Procurement: Miklos Michael J. Brownstein (NHGRI) & Shiraki

CDNA Library Preparation: Michael J. Brownstein (NHGRI) & Shiraki

Toshiyuki and Piero Carninci (RIKEN)

Toshiyuki and Piero Carninci (RIKEN)

DNA Sequencing by: The I.M.A.G.E. Consortium (LINL)

DNA Sequencing by: Sequencing Group at the Stanford Human Genome

Center, Stanford University School of Medicine, Stanford, CA 94305

Web site: (Dickson, Mark) mcd@paxil.stanford.edu

Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,

R. M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1103 TCCTTCACAGCCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGGAGAG 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACAAGGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1043 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1163 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGTITCATACTCATGAGGGGTACATGATTTGACAGCCCCATCAGGGCCGGGTTGG 1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
Sanchez, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y., Bouffard, G.G., Blakeeley, R.W., Touchman, J.W., Green, B.D., Dickson, M.C., Rodriguez, A.C., Grimwood, J., Schmutz, J., Wyers, R.M., Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E., Schnerch, A., Schein, J.E., Jones, S.J. and Marra, M.A. Generation and initial analysis of more than 15,000 full-length human and mouse CDNA sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGITICATACTCATGAGGGGTACATGATGGATITIGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                   Submitted (31-JUL-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clone distribution: MGC clone distribution information can be for through the I.M.A.G.E. Consortium/JLNL at: http://image.llnl.gov Series: IRAK Plate: 48 Row: f COlumn: 7 This clone was selected for full length sequencing because it passed the following selection criteria: Similarity but not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٠<u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 3870;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                identity to protein.
This clone has the following problem: retained intron.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/mol type="mRNA"
/db xref="taxon:9606"
/dlone="IMAGE:5274415"
/tissue type="Brain, hippocampus"
/clone_lib="NIH MGC 95"
                                                                                                                                                                                                                                                                                                                                                                       WIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.1%; Score 1091; DB 11; 99.9%; Pred. No. 9.7e-237; iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'note="Vector: pBluescript"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'lab host="DH10B"
                                                                                                                                                                                                                       (bases 1 to 3870)
                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .3870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                              trausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 1102; Conserv
                                                                                                                                                                           238825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
                                                                                                                                                                         MEDLINE
PUBMED
EFERENCE
```

FEATURES

RIGIN

ă ≿ ઝ

≿

હ

≿

а

⋩

⋩

TITLE

```
1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1243
                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1004 TCCTTCACAGCATTTGGAAGCTCCCAGAGACAAGTCACTTGACAGTTCATTGATGGAGAC 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1603
                                                                                                                   mouse cDNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1604 TGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAAGAACAACTTAAAGGTACTGGG 1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             629
                                                                                                                                                                                                                                                                                                                                                                     09
                                                                                                                                                                                                                                                                                                                                                                                                             944 GAGTTATGCCTTCACAGGCTGCTTATGTTGCCACCTCTGATTCCACACAGAGCCCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1064 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1124 TGCCGAGGATACATTGCGAGCACAAGGAGATTTCAAATGATGTTGAAGAAGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1184 ACAGTTTCATGCTCATGAGGATTCATGATGGATCTGACATCTCATCAAGGACTTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1364 TAGCATGGAAAAACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1724 TCTTCTAAATGGCAGCATTTTACTGAAGAACAGTGCCTTTTTAGTACATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAGAAGATGCAGTGAACAAGATTCACACAGCTTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                     GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1304 AGCTGAAGTGCAAGAACAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             660 TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                      (MGD | MGI: 94909
match=999)"
                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                            DB 11; Length 3056;
                                                                                                                                                                                                                                                                                                                       Indels
    enriched
                                                                                                                                                                                                                                                                            Score 854.2; DB 11;
Pred. No. 5.2e-183;
0; Mismatches 148;
                                                                                                                                                                                                                                                                          Query Match 53.4%;
Best Local Similarity 86.5%;
Matches 954; Conservative
                                                                                                                                                                  misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  $ A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6.5 de (dases 1 to 50.50).
6.6 deach, J. Alzawa, K. Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hizoka, T., Hirozane, T., Hori, F., Ishi, Y., Itoh, M., Kagawa, I., Kanakawa, T., Katoh, H., Kawai, J., Koja, S., Konno, H., Kauda, M., Koya, S., Kurihara, C., Macsuyama, T., Miyazaki, M., Matacaki, M., Ohasto, N., Okazaki, Y., Salto, R., Saltoh, H., Sakai, C., Sakai, K., Ohno, M., Ohasto, N., Sano, H., Sasaki, D., Shibata, K., Nhurazaki, R., Ohno, M., Ohasto, N., Sano, Y., Tanaka, T., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yesunishi, A., Direct Submission and Hayashizaki, Y. Toya, T., Yesunishi, A., Direct Submission and Chemical Research (RIKEN) Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute, 1-7-22 Suchiro-cho, Teurumi-ku, Yokohama, Kanagawa 230-0045, Japan (B-mail:genome-research Group, UKL:http://genome.gec.riken.go.jp/, Tel:81-45-503-922, Fax:81-45-503-9216, Tel:81-45-503-922, Fax:81-45-503-9216, Propered and Genome Exploration Research Group in Riken Genomic Science Laboratory in Riken Process on Pulvision of Experimental Animal Research in Riken contributed to
                                                                                                              Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to repare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                        Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M., Sumi,N., Ishi,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamuco,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M., Ohaza,K., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y., Muramateu,M., Inoue,Y., Kira,A. and Hayashizaki,Y. RIKEN integrated sequence analysis (RISA) system--384-format Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The FANTOM Consortium and the RIKEN Genome Exploration Research Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs

Nature 420, 563-573 (2002)

6 (bases I to 3056)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    prepare mouse tissues.
Retina RNA was provided by Dr. Stefano Gustincich (Department of Neurobiology, Harvard Medical School, 220 Longwood Ave., Boston, 102115, USA) whose assistance is gratefully acknowledged. Please visit our was site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fancm.gsc.riken.go.jp/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
99279253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FANTOM Consortium.
                                                                     .0349636
                                                                                                                                                                                                                                                    1042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
TITLE
JOURNAL
MEDLINE
PUBMED
EFERENCE
AUTHORS
                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
PUBMED
EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
EFERENCE
AUTHORS
```

JOURNAL

TITLE

TITLE

EATURES

DMMENT

	OY 181 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGGGAAGTGGGAAAGA 240	Qy 241 CCAGTTTCATACTCATGAGGGTACATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300 bb 525 CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGCCGGGGTTGC 584	Qy 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAGATGAAGA 360 	OY 361 AACTGAAGTACAAGAAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 bb 645 AACTGAAGTACAAGAGGAGATGAATCTCCTAAGATGAGGAATGCCTCAGGGTAGC 704	421 TAGCATGGAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT	Db 765 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAGAACAAGAAAATGGAGGAAGA 824 Qy 540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 599	OY 600 AGAAGATCTAGAACAAGAACAAGGTCAAGGTCAATTCTCTCACTCA	Qy 660 TGATGAATCTAGTGGGAACTCGCAACTGCTGCTGTTGGAAGAACAACTTAAGGTATTGGG 719 Db 945 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTGTTGGAAGAACAACTTAAGGTATTGGG 1004	Qy 720 AGATCGAIGGGGAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT 779	Qy 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839 1065 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAG	QY 840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT 899 Db 10991098	QY 900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAGAAAAAAGAAAACCAA 959 1099GTTTTAAAAGCGGATCTAGAAAAGAAAAAGAAAAACCAT 1136	OY 960 GGGCAAACTGTATTCACTCAACAAGATCTTTTCAACACTGAAGAATAAGTCAGTGAC 1019	1020 CCAGAAGACGGAAGCATGGCTGGF 	OY 1000 ALITARANAGARANAGA 1102 DD 1257 ACTTGAAAAGAGTACAGACAGA 1279	RESULT 4 AV399455 LOCUS LOCUS AV399455 AV399455 AV399455 BEFINITION MUS musculus HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence, genomic survey sequence.
	2y 900 AICAAGICIICAAAAACIGGCGGIIITAAAAGCGGAICIAGAAAAGAAA	2y 960 GGGCAAACTGTATTCACTCAAACATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019 	2y 1020 CCAGAAGACGGAAGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079 	2y 1080 ACTTGAAAAGAGTACAGCACAGA 1102 	NESULT 3 NY399453	ACCESELON AY39453 PERMODN AY399453.1 GI:39755442 PERMODN GS. SOURCE Homo sapiens (human) ORGANISM Homo sapiens	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Nammalia; Eutherlia; Primates; Catarrhini; Hominidae; Homo. NEFERENCE 1 (bases 1 to 5691) AUTHORS Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,	Vello,D.K., Lu,F., Murpny .H., White,T.J., Sninsky, from human-chimp-mouse	JOURNAL Science 302 (5652), 1960-1963 (2003) PUBMED 14671302 **EFERENCE 2 (bases 1 to 5691)	AUTHORS CLAIK, A.C., Glandwaki,S., Nielson,R., Thomas,P., Kejariwai,A., Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B., Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J., Adams,M.D. and Cargill,M.	JOURNAL DIECU SUDMITERION (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA (17-15) Sequence was made by sequencing genomic exons and ordering	EATURES the Dased on alignment: Source 1.5691 Cognation="Hono appiers" 'And become appiers"	/www_rype=-genomirc_bna- /db_xref==taxon:9606" <1>5691 /locus_tag="HCM0229"	Query Match 52.1%; Score 833.8; DB 29; Length 5691; Best Local Similarity 89.1%; Pred, No. 2.5e-178; Matches 983; Conservative 0; Mismatches 2; Indels 118; Gaps 3;	1) GAGCTATGCCTACACACACACGCTTATGTCACCACCTCTGACCCTACACGCACCATT 60	y 61 ICCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGG 120

DB	RESULT 5 CB22896 CB22896 CB22896 CB22896 LOCUS DEFINITION AGENCOURT 11499247 NICHD_Rh_Ov1 Macaca mulatta CDNA Clone ACCESION VERSION CB22896 TG22896 TG22896 TG22896 Macaca mulatta (rhesus monkey) NGGANISM Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Macaca mulatta (rhesus monkey) Mational Cancer Institute, Cancer Genome Anatomy Project (CGAP), THE Tumor Gene Index JUNENAL Unpublished (1997) Concact: Robert Strausberg, Ph.D. Email: cgapbs-romail.nih.gov Tissue Procuement: Dr. Elict Spindel CONA Library Preparation: CLONTECH Tissue Procuement: Dr. Elict Spindel CONA Library Preparation: CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CLONTECH Tissue Procuement: Dr. Macaca (respection CL
ERSION AN199455 ERSION AN199455.1 GI:39755444 GGS. EYWERD OKGANISK Mus musculus (house mouse) OKGANISK Mus musculus (house mouse) Musmacalus Musmacalus ENEMARYOTA: Metazos; Chordata; Craniata; Vertebrata; Euteleostomi; Mandalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus. Todd, M.A., Tanenbaum, D.M., Civelo, D.R., Lu, Shinsky, J.G., Adams, M.D. and Cargill, M., Thomas, P., Kejariwal, A., THILE Intering nonmeutral evolution from human-chimp-mouse orthologous Gent tios JOURNAL Science 302 (5652), 1960-1963 (2003) FERTICAS, Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., THILE Intering nonmeutral evolution from human-chimp-mouse orthologous Gent tios JOURNAL Science 302 (5652), 1960-1963 (2003) FERTICAS, Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., TOGAK, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferticas, S., Mang, G., Zheng, X.H., White, T.J., Shinsky, J.J., Adams, M.D. and Cargill, M. THILE Direct Submission JOURNAL Rockville, WD 2080, USA Adams, M.D. and Cargill, M. THE DIRECT Schools and Alliers SOURCE Submission JOURNAL MAD AND AND AND AND AND AND AND AND AND A	1 ICCTTCACAGCATTTGGAAGCTCCTGAAGACACTCTTTTGATGGAGG 1 ICCTTCACAGCATTTGGAAGCTCCTCGAAGACACTCTTTTGATGGAGG 1 ICCTTCACAGCATTTGGAAGCTCCTCGAAGACACTCTTTTTTTT

ဖ

```
S Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Dienet Shubmission

L Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA

This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers

Location/Qualifiers

1. 5676

/ mol_type="genomic DNA"
/ mol_type="genomic DNA"
/ db_xfafaftaxon:9598"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       949 CACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATC 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1009 ienaegreeacaeaaecceecreegricritracaaeacarecricreaaareecaaegr 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Pan.
1 (bases 1 to 567).
Clark, A.G. Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wanoy, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, White, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320 AGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTAGTTGATGAATCTAGTGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 529 GGGTACATGATGGATNNNNNAGCCCATCAGGCCGGGTTGGTAATANNNNNANTTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          589 AGTINININTGATIGGAACAGGAAATITATCAGAAGATGAAGAAACIGAAGTACAAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 709 NNTITACATAGAGITITIAATGGATCICCAGAATCAGAAACTGAAAGAGTTGAATGACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       829 GAAGACCIAAAACGCCAAGTACAACAACATAAGNNNNNCAAGAAGAAGTTTAGAACAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAANNNANTGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               260 GGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            440 AATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACTGAAAGAGTTGAATGACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTAACAAAAACAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          769 CTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGAGGCCTCTTGGACCTGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACATCCTTCTCAAATGGCAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 5676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 31.4%; Score 502; DB 29; 11 Similarity 75.1%; Pred. No. 5.1e-103; 634; Conservative 0; Mismatches 101;
                                                                                                                                                                                                                                                                        Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /locus_tag="HCM0229"
  Pan troglodytes
                                                                                                                                                                                                                                                 gene trios
                                                                                                                                                                                                                                                                                                     14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best_Local
Matches 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
ORGANISM
                                                                                                                                                                                                                                                                                                  PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                           AUTHORS
                                                                                 REFERENCE
                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEATURES
                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                    /organism="Macaca mulatta"
//organism="Macaca mulatta"
//organism="MRNA"
//ob_xref="Laxon:9544"
//clone="IMAGE:68482"
//tissue_type="Covary"
//tissue_type="Covary"
//tissue_type="Covary"
//tissue_type="Covary"
//ocfore_lib="NIGENE Rh Ovu"
//ocfore_lib="NIGENE Rh Ovu"
//ocfore lib="NIGENE Rh Ovu"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore lib="NIGENE"
//ocfore li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5676 bp DNA linear GSS 12-DEC-2003
gene, VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 GGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAGCAACTTAAGGT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 ATTGGGAGATCGATGGGCAAACATCTGCAGATGGACAGAGACCGCTGGGTTCTTTTACA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541 TTCAGAAAAGAAGATGTGGTGAACAGGATTCACACAACTGGGCTTTAAGGATCAAAATG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 GAAAGAACCCCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGGGAGATCGATGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           774 AGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481 AGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAGAAAAAGAAGATGCAGTGAACAAGATTCACACAACT-GGCTTTAAAGATCAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       295 GGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GGTTGGTAATATTCTACAATTGGGAAGTCAGCTGATTGGAACAGGGAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ñ
                                                                                                                                                                                                                                                                                                                                                                                                        36.6%; Score 585.2; DB 14; Length 728; ilarity 96.9%; Pred. No. 4.6e-122; Conservative 0; Mismatches 18; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAA 930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ax399454 1 GI:39755443
Ax399454.1 GI:39755443
GSS.
Pan troglodytes (chimpanzee)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pan troglodytes HCM0229
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity Matches 618; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY399454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
AY399454
                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \dot{\alpha}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{>}{\circ}
```

7

319 588 379 648 498

768 558 828

439 708 618

888 678 948

-

```
01-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210
Metabolism Div. (Alan Permutt Lab), Washington University School of Medicine, Box 8127, 660 South Euclid Ave., St. Louis, Mo 63110, E-mail: himoweelmgate.wustl.edu, Tel: 314-362-1916, Fax: 314-747-2692."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               509 dagcrarieccracacacacacerecrariarereaceacerereaceracacagaecearr 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               449 ICCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               329 recreaceacarrecaaceacaacaacaacaacaarrrrraarcarcaaacrecaaaaa 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC -GAAACT 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 1047)
                                                                                                                                                                                                                                                                                                                                                                                                                                                09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               149 AACTGAAGTACAAGAGGAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CB8E0319 1047 pp mRNA linear EST 01-SEP-2.
MRA-0070 MOUSE ADULT RETINA Mus musculus cDNA 5', mRNA sequence.
CB850319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      269 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           389 reaagraaaccresaccerrarcaaacaccrrrasaasaasaarrarcerescrrerre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GAGCTATGCCTACACACACAGGTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGAGGACACATTGCAAGCACACAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Annotation and analysis of 10,000 expressed sequence tags from developing mouse eye and adult retina Genome Biol. 4 (10), R65 (2003)
                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yu, J., Farjo, R., MacNee, S.P., Baehr, W., Stambolian, D.E. and
Swaroop, A.
                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                       Length 595;
                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Swaroop, A.
Contact: Swaroop, A.
Department of Ophthalmology and Visual Sciences
Kellogg Eye Center, University of Michigan
540 KEC, 1000 Wall St., Ann Arbor, MI 48105, USA
Tel: 734 615 2346
Fax: 734 647 0228
Bmail: swaroop@umich.edu.
                                                                                                                                                                                                                                                             31.0%; Score 497; DB 14;
99.8%; Pred. No. 4.6e-102;
cive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480 GAAAGAGTTGAATGACTGGCTAACAAAA 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 GAAAGAGTTGAATGACTGGCTAACAAAA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST.
Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CB850319.1 GI:34380806
                                                                                                                                                                                                                                                                                                            Local Similarity 99.8'
les 508; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22881944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14519200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
CB850319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol type="manny" mappens
/mol type="manny"

db xref="texon:9606"
/clone="laxon:9606"
/tissue type="builtied"
/tissue type="builtied"
/tissue type="builtied"
/tissue type="builtied"
/tissue type="builtied"
/clone=line"
/tissue type="builtied"
/clone=line"
/tissue type="builtied"
/tissue type="builtied"
/tissue type="builtied"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tissue type="tex-its"
/tisue type="tex-its"
/tisue type="tex-its"
/tisue type="tex-its"
/tisue type="tex-its"
/tisue type="tex-its"
/tisue type="tex-its"
                                                                                                                                                                             1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CB177816 1921-013 1921-0103 1921-0104 1921-0103 1921-0104 1921-0104 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-0105 1921-010
                                                                                                                                                                                                                                                                                                                                                  1084 ---GITITIAAAAGCGGATNNNGAAAAGAAAAGCAATCCATGGGCAAACTATTTNNNNN 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1141 NNACAAGNTNTTCTNTNAACACTGANGAATAAGTCAGTGACCCNNAAGACGGAAGCNNGG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1039 CTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAACTTGAAAAGAGTACAGCA 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201 NNGGATAACTTTGCCCGNNNTTGGGATAATTTNNNCCAAAAACNNGAAAAGGTACAGCA 1260
                                                                                             918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (2000)
Other ESTs: is21c01.y1
Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi Inoue
Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 617-495-1812

Email: dmelton@biohp.harvard.edu
Library was constructed by Dr. Hiroshi Inoue DNA sequencing by:

Rashington University Genome Sequencing Center For information on
obtaining a clone please contact: Dr. Hiroshi Inoue
(hinoue@im.wustl.edu)

Seq primer: -40RP from Gioco
High quality sequence stop: 448.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bukaryota Metazoa, Chordata, Craniata; Vertebrata, Buteleostomi, Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 595)
Melton, D., Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K., Lemsbha, I., Scearce, M., Breetelli, J., Gardwohl, G., Clifton, S., Hillier, L., Marra, M., Pape, D., Wylie, T., Martin, J., Blistain, A., Schmitt, A., Theising, B., Ritter, E., Ronko, I., Bennett, J., Cardens, M., Gibons, M., McCann, R., Cole, R., Tesgareishvili, R., Williams, T., Jackson, Y. and Bowers, Y. Cole, R., Tesgareishvili, R., Endocrine Panoreas Consortium
                                                                                         859 AAGATTCACACAAACTGGCTTTAAAGATCAAAATGAAATGTTATCAAGTCTTCAAAAACTG
                                                                                                                                                                                                                                                                  919 GCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCATGGGCAAACTGTATTCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                           979 AAACAAGATCTTTTCAACACTGAAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CB177816
CB177816.1 GI:28186206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (human)
Homo sapiens
    1069 CTTACTGAAGAACAG-
                                                                                                                                                                             1084 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1261 CAGA 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ESULT 7
B177816/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
OMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ERSION
EYWORDS
OURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EATURES
```

ω

```
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Series: IRAK Plate: 23 Row: j Column: 4 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF analysis, Similarity but not identity to protein This clone has the following problem: retained intron. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               crercadaceaceaceacrrreacarceacaacacareacerrecrecareaarecaacered
                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: MGC help desk
Email: cgapbs.remail.nih.gov
Tissue Procurement: Gilbert Smith, Ph.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Baylor College of Medicine Human Genome
Sequencing Center
Center code: BCM-HGSC
Keb site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: ang@bcm.tmc.edu
Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Louleeged, H.,
Kowis, C.R., Sneed, A.J., Martin, R.G., Muzny, D.M., Nanavati,
A.N., Gibbs, R.A.
                            Mus musculus (house mouse)
Mus musculus
Musryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
1 (bases 1 to 2334)
                                                                                                                                                                                                                                       Direct Submission
Submitted (25-UTL-2001) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1042 Adcaccercardaagradacargaarrradacadcraccadaradcgcradagaadard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1162 Grecaagaagreaaagaggagrirgeraceargaaacrirrargarggagergaege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1222 caccadadeadecadedadeaacerecracadecaaccadereareacadadaeacr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTICATIGATGGAGGGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       164 TTATCGTGGCTTCTTTCTGCTGAGGACACATGCAAGCACAAGGAGATTTCTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    creacerecrecrecreses de de contra de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracidad de caracida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 344 TIATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCCTCCTAAATTCAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:10090"
/clone="INAGE:3979320"
/tissue type="Mammary tumor. Metallothionien-TGF almodel. 10 month old virgin mouse. Taken by biopsy."
/clone lib="NCI CGAP_Mam1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20.8%; Score 332.6; DB 11; Length 2334; llarity 59.0%; Pred. No. 1.2e-64; Conservative 0; Mismatches 409; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                              NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pCMV-SPORT6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Mus musculus"
/mol_type="mRNA"
/strain="FVB/N"
                                                                                                                                                                                                   Strausberg, R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 589; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                          REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC011062 2334 bp mRNA linear HTC 04-MAR-2003 Ms musculus, Similar to utrophin, clone INAGE:3979320, mRNA. BC011062.1 GI:15029695
                                                                                                                                                                                                                                                                                                                                                                                                              ý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86 GGATAGTTACCAAACTGCTTTANAAGAAGTACTTTCATGGCTTCTTTCTGCCGAGGATAC 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATAC 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146 ATTGCGAGCACAAGGAGAGATTTCAAATGATGTTGAAGAAGAAGAAGAACAGTTTCATGC 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             313 ATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAGAAGTGAAGTACA 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  266 GTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGATGAAGAAGCTGAAGTGCA 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 326 AGAACAAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTANCCTAGCATGGAAA 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACAAAGCAATITACATAGAGTITTAATGGATCTCCAGAATC-GAAACTGAAAGAGTTGA 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        446 ATGACTGGTTAACAAAAACTGAAGAGAACTAANAAAATGGAGGAGGAGGCCCTTTGGAC 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAAAGGTGC-TTCAAGAAGATCTA 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506 CTGATCTTGAAGATCTAAAATGCCAAGTACAACAACAACATAAGGTGCTTTCAAGAAGATCTA 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAATCT 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caacaggagcagchcagghcaachcachcachcanggaaghaghaghggagcangaahcc 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       670 AGTGGAGATCACGCAACTGCTGTTTGGAAGAACAAC-TTAAGGTATTGGGAGATCGATG 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 626 AGCGGGGATCATGCAACAGCTGCTTTGGAANAACAACTTTAAGGNACTGGGAGATCGATG 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCAAACATCTG-TAGATGGACAGAAGACCGCTGGGTT-CTTTTACAAGACATCCTTCTC 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              686 GGCAAATATCTGCAAAATGGACTGAAAACCGTTGGATTGTTTTTACANGATTTTCTTCTA 745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               787 APAIGGCAACGICITACIGAAGAACAGIGCCITITIAGIGCAIGGCITICAGAAAAAAA 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATGAGGGGTACATGATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCATGAGGGATTCATGATGGATCTGACATCTCATCAGGACTTGTTGGTAATGTTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAG-CTAGCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                Length 1047;
                                                                                                                                                                                                                                                                                                                                                                                                              ů,
                                                                                                                                                                                                                                                                                                                                         Ouery Match
30.1%; Score 481.2; DB 14; Length
Best Local Similarity 83.1%; Pred. No. 2e-98;
Matches 609; Conservative 0; Mismatches 118; Indels
                                                                                                     /mol_type="mRNA"
/db_xref="taxon:10090"
/tiseue_type="retina"
/clone_llb="MOUSE_ADULT_RETINA"
/note="Vector: pSPORT1"
                                       l. .1047
/organism="Mus musculus"
       ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          806 TGCATTGANAACA 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     847 GATGCAGTGAACA 859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COCUS
DEFINITION
ACCESSION
FERSION
                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
       EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               చ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                മ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           હ્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       မ္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        હ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ≿
```

1,

Gaps

1101

1161

223

1221

343

403

```
978 GCTGACCTGGTTGCTTCTGCTGAGGACACTTTCCAGGAGCAGGATGATGTTTTCTGATGA 1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1158 referedededadadadadatridadatrededadadadadededededadadedadada 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1338 TCAGAAGATGGAAACTTGCCCCTGGATGATGATGTAAAATCTCTACAAAAGCTGCTAGA 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1458 rcacardordercarrerreardadacadregrearderacacracacrarerracadada 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            :518 ccacriacacaaacindendacdecrodacacaciardecerrideacrodaadecroda 1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1398 agaacaraaaagrrigcaaagrgarcirgaggcrgaacagrgaaagraarricacraac 1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1578 GAATAGGTTACAAGAAATCAATATATTGTGGCAGGAATTATTGGAAGAACAGTGCTTGTT 1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           762 GGTTCTTTTACAAGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTT 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    822 TAGTGCATGGCTTTCAGAAAAAAAAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAA 881
Adams,M.D. and Cargill,M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering
them based on alignment.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1278 ACTGCAGAAGAAGCAACTGCAGCACCTCCCGCCTGGTTAACACTCACAGAGGAGCGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      522 AAGGAAAATGGAGGAAGGAGCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     642 TCACATGGTGGTGGTTGATGTGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                918 caccacrercacreaegreacarecarcresacacrarcasarrecerresaggaagr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163 ATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   223 TGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          343 ATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTTCAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1218 GGAGGCTCTTAGGGTGGAGAGTATGGACAGACAGTCCCGGCTGCACGATGTGCTGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     463 TCTCCAGAA-TCGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               582 ACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         702 ACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      103 CAGITCAITGAIGGAGAGIGAAGIAAACCIGGACCGITAICAAACAGCITIAGAAGAAGI
                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            ۲;
                                                                                                                                                                                                                                                                                                                                                                cch 20.1%; Score 322.6; DB 29; Length 9915; 1 Similarity 62.4%; Pred: No. 3e-62; 522; Conservative 0; Mismatches 314; Indels 1;
                                                                                                                                                         1. .9915
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                    <1. .. > 9915
/gene="UTRN"
/locus_tag="HCM2752"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     403
                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                     TITLE
JOURNAL
                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ें
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001
                                                                                                                                                                                                                 1521
                                                                                                                                                                                                                                                                                                     1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAAAAAGCAATCCATGGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTG 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1882 Argaagagagagarcragarcaacrgaagagaarraggcaagargaggcaarracrc 1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9915 bp DNA linear GSS 15-DEC-2003
VIRTUAL TRANSCRIPT, partial sequence,
                GAGGCGCTCCGGGTGGAGAGCATGGAGAGCAGTCCCGGCTGCACGCTCTGATGGAG 1401
                                                                                                                                                                                                                                                                                                                                                                                         CACATGGTGGTGATTGTGGATGAAACAGTGGGGAGAGTGCCACAGCTCTTCTGGAAGAT 1641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1762 GAGGCTTGGCTCACCGAAAAGGAAGAGCTTTGAATAAAGTTCAAACCAGCAACTTTAAA 1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              642
                                                                                                                                                                                                                                                                                                                                                                                                                                      762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    942
                                                                                   CTCCAGAATCGA-AACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACA 522
                                                                                                                                                                       582
                                                                                                                                                                                                                                                                                                                                               702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
(bases 1 to 9915)
Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Nang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Inferring, nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                              CACATGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTTACAGAAACTGGGTGAGCGCTGGACAGCTGTATGCCGCTGGACTGAAGAACGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            763 GITCITITACAAGACAICCITCICAAAIGGCAACGICTIACIGAAGAACAGIGCCITITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1702 AACAGGTTGCAAGAAATCAGTATTCTGTGGCAGGAATTATTGGAAGAGCAGTGTCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                823 AGTGCATGGCTTTCAGAAAAAAAAGAIGCAGTGAACAAGATTCACACACCACTGGCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1003 AAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1942 AGTAATCCCAAGGCATCTAAGATGAACAGTGACTCTGAGGAGCTAACACAGAGATGG
                                                                                                                                                                                                                 1462 cadalagalidalagacerececiedergargargaeterecerecereceragaagergerreaa
                                                                                                                                                                                                                                                                                                   GAACATAAAAGTTTGCAAAATGACCTTGAAGCTGAACAGGTGAAGGTAAATTCCTTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGG
                                                                                                                                                                       AGGADAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 (bases 1 to 9915)
Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
Todd,M.A., Tanenbaum,D.M., Givello,D.R., Lu,F., Murphy,B.,
Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATAATTTAGTCCAAAACTTGAAAAGAGTACAGCACAG 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002 GATTCTCTGGTTCAGAGACTCGAAGACTCTTCTAACCAG 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AY407022
Homo sapiens UTRN gene,
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY407022.1 GI:39762993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1063 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            943
                                                                                                                             1402
                                                                                                                                                                          523
                                                                                                                                                                                                                                                              583
                                                                                                                                                                                                                                                                                                     1522
                                                                                                                                                                                                                                                                                                                                                                                            1582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        883
                                                                                   464
                                                                                                                                                                                                                                                                                                                                                  643
                                                                                                                                                                                                                                                                                                                                                                                                                                        703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ESULT 10
X407022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
PUBMED
EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
```

222

ä

1277

581

701

761

462

g

```
1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9096 bp DNA linear GSS 15-DEC-2003
Pan troglodytes UTRN gene, VIRTUAL TRANSCRIPT, partial sequence,
avenomic survey sequence.
                                                                                                                          1398
                                                                                                                                                                                                                                                                                                                                                                                          1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1638
                                                                                                                                                                                                                                                                                                   1639 GAGGCTTGGCTCACCGAAAAGGAAGAGCTTTGAATAAAGTTCAAACCAGCAACTTTAAA 1698
                                                                                                                                                                                                                                                                                                                                                762
                                                                                                                                                                                                                                                                                                                                                                                                                                       822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia, Butheria; Primates; Catarrhini, Hominidae; Pan. (Asses 1 to 9096).

Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu.F., Murphy, B., Reritara, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Homental evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clark, A.G., Glancwski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glancwski, S., Nielson, R., Lu, F., Murphy, B., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Direct Submission

Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             crecadadanalcaderideradericerenanderideridederereneradadaderener
                                                                                                                          GAACATAAAAGTTTGCAAAATGACCTTGAAGCTGAACAGGTGAAGGTAAATTCCTTAACT
                                                                                                                                                                                                                                                              643 CACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                CAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGG
                                                                                                                                                                                                                                                                                                                                                                                          1519 cagriacadaaacidddigadddciddadacacreiaidcodciddachddaaddridd
                                                                                                                                                                                                                                                                                                                                                                                                                                         763 GITCITITACAAGACAICCITCICAAAIGGCAACGICITACIGAAGAACAGIGCCITITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            823 AGTGCATGGCTTTCAGAAAAAAAAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAA
                                                                                       523 AGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAACGCCAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1699 daccadaaddaadcraagrgrcaddagccacarcrddcrdr 1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     883 GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGT 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism≂"Pan troglodytes"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="genomic_DN/db_xref="taxon:9598"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="UTRN"
/locus_tag="HCM2752"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pan troglodytes (chimpanzee)
Pan troglodytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY407023
AY407023.1 GI:39762994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14671302
                                                                                                                                                                                                                      1399
                                                                                                                                                                              583
                                                                                                                                                                                                                                                                                                                                                     703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY407023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                        g
                                                                                       à
                                                                                                                          셤
                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             daggeditedagadadaaaadelaadagagedagactedagagagatetagaaga 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caccadadedadedregadederecrecadenadadedregadadadadadadadadada 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crercadaddaddadarridagarceaddaacadarcacerrecreaardeaaddad 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          979 creacerecrererececesaseacacerrecaseaceaacacaacareacarrecarratear 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9691 bp DNA linear GSS 15-DEC-2003
VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAA 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TIATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGG 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              104 AGTICATIGAIGGAGAGIGAAGIAAACCIGGACCGIIAICAAACAGCITIAGAAGAAGIA 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGAT 463
                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammaliai, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Musinae, Losas, Losas, Losas, Nielson, R., Thomas, P., Kejariwal, A., Tanda, A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inferring nonneutral evolution from human-chimp-mouse orthologous
  1698 AGACCAAAAGGAACTAAGTGTCAGTGTTCGACGTCTGGCTGTAAGTGATGGGGTTGT 1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCACCGTCACTGAAGTGGACATGGATTTGGACAGCTACCAGATAGCGCTAGAGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  164 TTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 9691;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 301.8; DB 29; Length
Pred. No. 1.5e-57;
0; Mismatches 317; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="genomic DNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="UTRN"
/locus_tag="HCM2752"
                                                                                                                                                                                                                                                                     Mus musculus (house mouse)
                                                                                                                                                           Mus musculus UTRN gene,
                                                                                                                                                                                     genomic survey sequence
                                                                                                                                                                                                                        AY407024.1 GI:39762995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18.9%;
larity 61.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . >9691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . . 9691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 503; Conservat
                                                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               404
                                                                                         RESULT 11
AY407024
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sonrce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
```

TITLE

COMMENT

ORIGIN

셤 à 셤 ò g ð 유 ð

ò

엄 ઠ

```
Rattus.

1. (Dases I to 1122)

1. (Dases I to 1122)

1. Sultz, M.A., Zhang, L., Gu, Y.-Z., Baker, G.L., Fannuchi, M.V.,

Padua, A.M., Gureke, M.A., Morin, D., Penn, S.G., Jovanovich, S.B.,

Plopper, C.G. and Buckpitt, A.R.,

Gene Expression Analysis in Response to Lung Toxicants: I.

Sequencing and Microarray Development

Unpublished (2003)

Lontaris Multz MA

Dept. of Molecular Biosciences, School of Veterinary Medicine

University of California, Davis

1311 Haring Hall, One Shields Avenue, Davis, CA 95616, USA

Tel: 530 752 0793

Fax: 530 752 4698

Email: machults@ucdavis.edu

Average Phred score is 20 or better. All poor quality data (Phred < 20) and vector/linker sequence has been removed.

High quality sequence stop: 1122.
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S:
Matches 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   403
                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                       JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                    978 GCTGACCTGGTTGCTTTCTGCCGAGGACACTTTCCAGGAGCAGGATGATATTTCTGATGA 1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGCTTGGTTAACCGAAAAAGAAGAGCTTTAAATAAAGACCAGACAAGCAACTTCAA 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1158 reteredakadadadadatridadatredadadadadahnnneerderedaheeradard 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1278 Achecadaadeaaccaachecadechereedechedriaacaereacadadadadecan 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .338 rcadaddarddaaacrrgccccrcgargardardardraaarcrcracaaaacrgcrada 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1398 AGAACATAAAAGTTTGCAAAGTGATCTTGAGGCTGAACAGGTGAAAGTAAATTCACTAAC 1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rcacardordercarrorroangaaacadrocroagagarocracaccracaaaaa 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1578 GAATAGGITTACAAGAAATCAATATTGTGGCAGGAATTATTGGAAGAACAGTGCTTGTT 1637
                                                                               ij
                                                                                                                                                                                                                                                                                                                                                                                         462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGGCTCTTAGGGTGGAGGATAGGACANNNAGTCCGGGCTGCACGATGTGCTGATGGA 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               641
                                                                                                                                162
                                                                                                                                                                                 977
                                                                                                                                                                                                                                     222
                                                                                                                                                                                                                                                                                                                                                                                                                                             283 CCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       702 ACAACTTAAGGTATTGGGAGATCGATGGGCAAACAICTGTAGATGGACAGAAGACGGCTG 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGTGCATGGCTTTCAGAAAAAAAAGATGCAGTGAACAAGATTCACACAGAACTGGCTTTAA 881
                                                                                                                                                                                                                                                                                                                                        TGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGC 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCACATGGTGGTGGTAGTTGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGA 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTCTTTTACAAGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTT 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACCAAAAGGAACTAAGTGTCAGTGTTCGACGTCTGGCTGTAAGTGATGGGGTTGT 1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAAGCGGATCT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCAC
                                                                                                                                                                                    918 CAGCACTGTCACTGAGGTTGACATGGATCTAGACAGCTATCAGATTGCGTTGGAGGAAGT
                                                                                                                                                                                                                                   163 ATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             522 AAGGAAAATGGAGGAAGGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACA
                                                                                                                                CAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGT
                                                                               Gaps
                           Match 18.7%; Score 299.8; DB 29; Length 9096; Local Similarity 58.4%; Pred. No. 4.4e-57; es 489; Conservative 0; Mismatches 347; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1638
                                                                                                                                   103
                                                                                                                                                                                                                                                                                                                                           223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        403
                                Query Match
```

organism="Rattus norvegicus"

Location/Qualifiers

/mol_type="mRNA" /strain="Sprague-Dawley" /db_xref="taxon:10116" /clone="Contig2846"

sex="male"

```
/tissue type="airway or parenchyma"
/dev stage="adult"
/dev stage="adult"
/clone lib="Rat lung airway and parenchyma cDNA libraries"
/note="organ lung, vector: pGEM-11Zf(-); Site_1: Eco RI;
Site_2: Not I; mRNA was isolated from microdissected rat
                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                              162
                                                                                                                                                                                                                                                                                                                           344
                                                                                                                                                                                                                                                                                                                                                                         222
                                                                                                                                                                                                                                                                                                                                                                                                                      404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    645 acrocadadadadechechechechecrechedechedecerchedadadadececar 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAACATAAGGTTCTAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCAC 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   343 ATTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  522 AAGGAAAATGGAGGAAGAAGCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                         ATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGA
                                                                                                                                                                                                                                                                                                                                                                                                              345 ACTGACATGGCTGCTGTCTGCGGAGGACACGTTCCAGGAGGAAGATGACATTTCTGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rerceaegacercaaagaecaerrrecraeceareaacarrrargardeaecreaerec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          465 gchechéndendendendendrerechechecrédenacenacrédrenchendégene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  525 reigieggalgagagagagariigagariieagagegagagagaecrigeigaagegeagaig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĠĠĸĠĠĊĠĊĊĊĠĠĊĸĠĠĸĠĠĠĸĠĠĸĠĸĠĸĠĸĠĸĠĊĊĠĠŢĠĊĸĠĸŢĠĸŢĠĊĊĊŢĠĸŢĠĠĸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cadencaderedegaridaeargearridaacadegaeacaderaceagaradeacriadagaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGC
                                                                                                                                                                                                                                     .;
H
                                                                                                                                                                                        DB 14; Length 1122;
                                                                                                                                                                                      16.5%; Score 264.8; DB 14; Length llarity 61.7%; Pred. No. 2.6e-49; Conservative 0; Mismatches 272; Indels
                                                                                                                   lung airways and parenchyma tissues.
                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                       439;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

CF109978 1122 bp mRNA linear EST 23-JUL-2003 Moltcomica03229 Rat lung airway and parenchyma cDNA libraries Rattus norvegicus cDNA clone Contig2846 5', mRNA sequence. CF109978

CF109978.1

CCESSION ERSION EYWORDS JURCE ORGANISM

ESULT 13 F109978 OCUS EFINITION

Rattus norvegicus (Norway rat) Rattus norvegicus Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,

	464 CTCCAGAATCGAAGAGCATGAAGAGCAGTTCCCGGTTGACACACAC	Db 625 CAGTTACAGAAACTGGGTGAGGCTGAGCTGTGTATGCCGGTGAGAACGTTGS B84 Qy 763 GTTCTTTACAAGACATCCTTCTCAAATGGCAACGCTTACTGAAGAACAGTGCTTTT 822	AUTHORS Carninci, P. and Hayashizaki, Y. TITLE High-efficiency full-length cDNA cloning JOURNAL MEDLINE 9279253 MEDLINE 10349636 REFERENCE AUTHORS Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., AUTHORS TITLE NEMBLINE JOURNAL Genome Res. 10 (10), 1617-1630 (2000) REFERENCE JOURNAL GO49974 PUBMED REFERENCE 31042159
165 AGAACATAAAAGTTTGCAAAGTGACCTCGAAGCTGAAGGTGAAGTGAATTCCTTAAC 824	1250598 BI250598 TOT DAPPENDED TO BEAUTION (60293659F1 NCI_CGAP_Mam5 Mus musculus CDNA clone IMAGE:5149431 5', mANA sequence. DETINITION (60293659F1 NCI_CGAP_Mam5 Mus musculus CDNA clone IMAGE:5149431 5', mANA sequence. BI250598 BI250598 GI:14799101 EXEMPLESION ELSENSON EXAMINATION MUS musculus (house mouse) ONGANISM Mus musculus (house mouse) ONGANISM Mus musculus (house mouse) Mus musculus (house mouse) ANTHORS Mus musculus (house mouse) Mus musculus (house mouse) Mus musculus (house mouse) ANTHORS Mus musculus (house mouse) Mus musculus (house mouse) ANTHORS Mus musculus (house mouse) ANTHORS Mus musculus (house mouse) AUTHORS Mus musculus (house mouse	CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at: http://image.lihl.gov Plate: LLAM11369 row: e column: 16 High quality sequence start: 3 High quality sequence stop: 771. Coation/Qualifiers Location/Qualifiers Location/Qualifiers Location/Qualifiers Location/Qualifiers Ab Arref="MASE: 149431" / Ab Aser="MASE: 149431" / Ab Ab Aser="MASE: 149431" / Ab Ab Ab Ab = "MASE: 149431" / Lisue type="Lumor, gross tissue" / Ab Ab Ab = "MASE: 149431" / Ab Ab Ab = "MASE: 149431" / Ab Ab Ab = "MASE: 149431" / Lisue type="Lumor, gross tissue" / Ab Ab Ab = "MASE: 149431" / Lisue type="Lumor, gross tissue" / Ab Ab Ab = "MASE: 149431" / Lisue type="Lumor, gross tissue" / Ab Ab Ab = "MASE: 149431" / Lisue type="Lumor, gross tissue" / Ab Ab Ab = "Mase: Ab Ab Ab Ab Ab Ab Ab Ab Ab Ab Ab Ab Ab	ORIGIN Query Match Query Match Best Local Similarity 61.4%; Pred. No. 3.38-47; Matches 460; Conservative 0; Mismatches 286; Indels 3; Gaps 3; Matches 460; Conservative 0; Mismatches 286; Indels 3; Gaps 3; Qy 104 AGTTCATTGATGGAGTGAAGTGAACTGGACCGTTATCAAAGAGCTTAGAAGAAGTA 163 Db 26 AGCACGTCATTGATGGACATGGATTTGGACGCTACCAGAAGATAGCGTTAGAAGAGAAGTG 85 Qy 164 TTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGAAGATAGCTTAATGAT 223 Db 86 CTGACGTGGCTCTTTCTGCTGAGGACACATTGCAAGAAGATAGTTTCTAATGAT 145

```
3731. .3736
/note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 67.0%;
Matches 337; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              completed: April
ne : 2804.51 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Search cor
Job time
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs

L (bases 1 to 3753)

E (bases 1 to 3753)

S Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Haragaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Haragaki, T., Ttoh, M., Kagawa, I., Kasukawa, T., Katoh, H., Kawai, J., Kojima, Y., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, R., Murata, M., Nakamura, M., Nashi, K., Nomura, K., Numazaki, R., Chno, M., Ohaato, N., Okazaki, Y., Satto, R., Sattoh, H., Sakai, C., Sakai, K., Sakazume, N., Sadao, H., Tagama, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaraki, T., Tanaka, T., Tomaraki, T., Tanaka, T., Tomaraki, T., Tanaka, T., Tomaraki, T., Tanaka, T., Tomaraki, Y., Tanaka, T., Tomaraki, Y., Tanaka, T., Tomaraki, Y., Tanaka, T., Tomaraki, Y., Tanaka, T., Tomaraki, Y., Tanaka, T., Tomaraki, Y., Tanaka, T., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., Tomaraki, Y., 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="unnamed protein product; dystrophin related protein 2 (MGD|MGI:107432, GB|U43520, evidence: BLASTN, 99%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \codon_start=1
\protein_id="BAC38217.1"
\dix=ref=="G1:56349155"
\translation="MQPLVMQGCPYTLPRCHEWHAADRFHHSSSLRNTCPQPQVRAAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="head"
/clone_lib="RIKEN full-length enriched mouse cDNA library'
Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P. Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakagundin, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J. Nazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The RIKEN Genome Exploration Research Group Phase II Team and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           he FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FANTOM Consortium.
Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="mRNA"
/strain="C57BL/6J"
/db_xref="FANTON DB:C130016K19"
/db_xref="MG1:2413800"
/db_xref="mG1:2413800"
/clone="C130016K19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dev stage="16 days embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            prepare mouse tissues.
                                                                                                                                                                                                                                                                                                                                                                                                               1076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
PUBMED
EFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
EFERENCE
AUTHORS
                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOS
                                                                                                                                                                                                                                                                                                                                       JOURNAL
```

TITLE

TITLE

EATURES

OMMENT

```
LSGTLOLPLREE IUWLSQUDELGAQUE CHARANTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENTERIENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1159 CGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTTTGACTCT 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            982 CTCCCAGAGCATATCCAAGCCATCAAGCTATTCAAAGAAGAATTCTCTCTGTGAAAGAT 1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1222 cacificcicicacificidaciacianteceriografica and addentificaciana de 1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1341
tipappwdgagdpclspkllngtvgatgplepsamnlcwneikkkshnlrarleafsd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1219 CTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1339 CCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.02 ardeagaarrecadegecrerdeaacagareaacarecagregaaacagerecagererea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1399 GTCGAGACCGAGTCAGGCAGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1099 CAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1162 Gredergagagerraadeaacreeagardeeeaccaegaacrraggeeergagreada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1459 CACTITICIACGICIGICIAGGICCCIGGGAGAGAGACCATCICGCCAAACAAAGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1519 CCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              862 caracicidaacarciaridaaaricaaaaacaaridaagaarridagcagrarif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1042 gegergaagrraergaardarcreeccaeccaecrieccarcrerererefecacricie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1279 AACGIGAGCCACGICAAIGACCIIGCICGCCAGCIIACCACIIIGGGCAIICAGCICCICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 237.4; DB 11; Length 3753; Pred. No. 5.4e-43; 0; Mismatches 166; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1579 CTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1342 Thahacchacchadccanch 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5, 2004, 08:15:21
```

```
US-09-687-875A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                     00 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Appli
Sequence 60, Appl
Sequence 10, Appli
Sequence 7, Appli
Sequence 9, Appli
Sequence 9, Appli
Sequence 6, Appli
Sequence 1186, Appli
Sequence 1186, Appli
Sequence 1186, Appli
Sequence 10, Appli
Sequence 10, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 1533, Appli
Sequence 2813, Appli
                                                                                                                                     April 4, 2004, 16:58:13 ; Search time 77.6428 Seconds (without alignments) 11443.127 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                            1 gagetatgeetacacacagg......taccagtetttagetgacet 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents NA:*
1: /cgTL2 (/ ptodata/2/ina/5A_COMB.seq:*
2: /cgTL2 (/ ptodata/2/ina/5B_COMB.seq:*
3: /cgTL2 (/ ptodata/2/ina/6A_COMB.seq:*
4: /cgTL2 (/ ptodata/2/ina/6B_COMB.seq:*
5: /cgTL2 (/ ptodata/2/ina/PCTUS_COMB.seq:*
6: /cgTL2 (/ ptodata/2/ina/PcTUS_COMB.seq:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-687-875A-1
US-09-484-970B-60
US-09-427-048A-10
US-09-091-501B-7
US-09-011-501B-7
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-09-011-501B-6
US-08-011-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                    682709 segs, 277475446 residues
                                                                                                                                                                                                                                          US-09-845-416-14_COPY_900_2500
1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                mode1
                                                                                                                                                                                                                                                                                                                                           IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                wa gaisu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inimum DB seq length: 0 aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              四日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19307
19307
19307
19307
200
200
200
2574
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11178
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
1178
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11788
11
                                                                                             nucleic search,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                    erfect score:
                                                                                                                                                                                                                                                                                                                                             coring table:
                                                                                                                                                                                                                                                                                               equence:
                                                                                                                                                                                                                                                                                                                                                                                                                       earched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atabase
                                                                                                                                               uo un
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       esult
```

```
Patent No. 6544786

BREARL NO. 6544786

Patent No. 6544786

Patent No. 6544786

APPLICANT: Xiao, Xiao

APPLICANT: Xiao, Xiao

APPLICANT: Liu, Paul

TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED PEI
FILE REFERENCE: 0.0792

CURRENT APPLICATION NUMBER: US/09/687,875A

CURRENT APPLICATION NUMBER: 60/158,868

PRIOR PLING DATE: 1999-10-15

NUMBER OF SEQ ID NOS: 22

SOFTWARE: Patentin version 3.1

SEQ ID NO 1

LENGTH: 5952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1011 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
            Sequence 13, Appl
Sequence 12, Appl
Sequence 44, Appl
Sequence 4, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 5, Appli
Sequence 512, Appli
Sequence 714, Appli
Sequence 236, Appli
Sequence 518, Appli
Sequence 518, Appli
Sequence 518, Appli
Sequence 518, Appli
Sequence 518, Appli
Sequence 518, Appli
Sequence 518, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 recrirence carridga a corcere a de carrida carrida carrida de a 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             891 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTGACACCCTACAGGGGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTTACACGGAGCCCATT
                                                                                                                                                                                                                      Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4; Length 5952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
9
US-08-477-831C-8

US-08-477-831C-13

US-08-477-831C-12

US-09-134-01C-447

US-08-985-335-4

US-09-910-132-24

US-09-910-172-4

US-09-910-172-4

US-09-915-115-1

US-09-915-115-1

US-09-91-115-1

US-09-95-912-674

US-09-95-91-12

US-09-91-12

US-09-14-969-14

US-09-014-969-14

US-08-133-0112

US-08-133-0112

US-08-133-1131-12

US-08-133-1131-12

US-08-133-1131-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1092.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:

NAME/KEY: misc_feature

LOCATION: (2897)...(2898)

OTHER INFORMATION: S4 junction site

NAME/KEY: misc_feature

LOCATION: (3199)...(3199)

OTHER INFORMATION: S2 junction site

US-09-687-875A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      68.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 99.4
Matches 1107; Conservative
                                           TYPE: DNA
ORGANISM: Homo sapiens
```

g

ò В $\overset{\sim}{\alpha}$ 8 ⋩ g

유 $\stackrel{>}{\alpha}$ g à g à g à g

8

```
1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                 1159 recricacaccarricadascrecreaagacaascrearricacagricarrearas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGITICALACICALGAGGGGIACALGAIGGALTIGACAGCCCALCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ccagriricaracreargagggracargargaririgacagcccarcagggcgggrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1579 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                    1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                      Length 13977;
                                                                                                                                                                                                                                                                            0; Indels
; SEQ ID NO 60
; LENGTH: 13977
; CRGANISH: Home sapiens
; PRATURE:
; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. 6426186 229357.11CB1
; LOCATION: 11721-11761, 12294, 13969
; OTHER INFORMATION: a, t, c, g, or other
US-09-484-970B-60
                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                    Score 1091; DB Pred. No. 0; Mismatches
                                                                                                                                                                                                                                  Query Match
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        009
                                                                                                                                                                                                                                                                                                                 Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1759
                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             669
                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ନ୍ଧ ବ୍ୟ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ሪ ይ ሪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
2
3
4
4
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             $ 8 $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              원
장
당
                                                                                                                                                         1310
                                                                                                                                                                                                                                                                                                                 1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1790
                                                                                                                                                                                                                                                                                                                                                                                          .431 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA 1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1791 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 1850
                                                                                                                                                                                                 479
                                                                                                                                                                                                                                                                            539
                                                                                                                                                                                                                                                                                                                                                                                                                                   629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   899
    1131 CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                            1191 TARTATTCTACARTTGGGAAGTAAGCTGATTGGAACAGGAAARTTATCAGAAGATGAAGA
                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                               1371 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1551 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1611 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1731 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        960 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCAAACTGTATTCACTCAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1911 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                1311 TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                          GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                      540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATCGATGGGCAAACATCTGTAGATGGACAGAACGCCCGCTGGGTTCTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cerrereaaredeaacererracreaacaacaecerrrracreaacaecerrreaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840 AAAAGAAGATGCAGTGAACAAGATTCACACACAGGCTTTAAAGGATCAAAATGAAATGTT
                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTIGAAAAGAGTACAGCACAGACCCTIGAAAGA 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1971 actricadadagiczkiekiekiekaarciekaara 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 60, Application US/09484970B
Patent No. 6426186
GENERAL INFORMATION:
APPLICANT: Jones, Karen A.
APPLICANT: Volkmuth, Wayne
TITLE OF INVENTION: BONE REMODELING GENES
FILE REFERENCE: PB-0014 US
CURRENT FILING DATE: 2000-01-18
CURRENT FILING DATE: 2000-01-18
SOFTWARE: PERL PROGRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-484-970B-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1080
                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1851
                                         301
                                                                                                                    361
```

엄 $\stackrel{>}{\circ}$ g 8 음 à 원 à 원 à

à

1218

1278

240

1338

1158

60

1398

300

1458

360

420

1518

1578

539

479

1638

1698

599

1758

1818

779

AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT agarogarogacaacarcroragarogacagaagacogorogorrorrracaagacarr 1938

840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT

CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA

1819

720

780

ò g à

240

300

```
13388 recceaddaracarreceadcacaadaadaarrrircaarcargricraaadaadaadaadaaaaaaaa 13329
                                                                                                                                                                                                                                                                                                                             13328 ACAGTITCATGCTCATGAGGATTCATGAGATCTGACATCTCATCAAGACTTGTTGG 13269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13208 AGCTGAAGTGCAAGAACAAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC 13149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13028 GCCCTTTGGACCTGATCTTGAAGATCTAAATGCCAAGTACAACATAAGGTGCTTCA 12969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12848 AGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTACAAGATAT 12789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12548 TCAAAAGATGGAAATCTGGATGGAAAACTTTGCACAACGTTGGGACAATTTAACCCAAAA 12489
13268 TAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAAGGGAAATTATCAGAAGATGAAGA 13209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12788 retreradatioschocartitactoandanchorocentritagiachtodecritenda 12729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13088 AAAAGAACTAGATGACTGGTTAACAAAAACTGAAGAGGAGGAACTAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12908 TGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12728 AAAAGATGCAATGAAGAACATTCAGACAAGTGGCTTTAAAGATCAAAATGAT
                                                                          13508 TCCTTCACAGCATTTGGAAGCTCCCAGAGACAAGTCACTTGACAGTTCATTGATGGAGAC
                                                                                                                                                                  13448 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC
                                                                                                                                                                                                                                                                                                241 CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                               301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480 GAAAGAGTIGAATGACTGGCTAACAAAACAGAAGAAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540 GCCTCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660 TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840 AAAAGAAGATGCAGTGAACAAGATTCACAAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       960 GGGCAAACTGTATTCACTCAAACAAGATCTTTCTATCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                            181 IGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTAAAGA
                                                                                                                           121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12488 ACTTGAAAGAGTTCAGCACAAA 12466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080 ACTTGAAAGAGTACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                  ò
                                                                                                                                                               g
                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                        <del>Q</del>
                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          음 충
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                          ठे
                                                                                                                                                                                                            ò
                                                                                                         2058
                                                                                                                                                                                                                                                              GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                          2059 GGGCAAACTGTATTCACTCAAACAAGATCTTTCAACACTGAAGAATAAGTCAGTGAC 2118
                                                                                                                                                                                                                                     CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                              1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCAT
                                                                 53.4%; Score 854.2; DB 3; Length 19307; 86.5%; Pred. No. 1.2e-252; ive 0; Mismatches 148; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Trustees of the University of Pennsylvania APPLICANT: Wilson, James M. APPLICANT: Wilson, James M. APPLICANT: Chen, Shu-Jen J. APPLICANT: Chen, Shu-Jen J. APPLICANT: Weltzman, Matthew TITLE OF INVENTION: Improved Adenovirus Virus and NUBER OF SEQUENCES: 10 CORRESPONDENCE ADDRESS: ADDRESSEE HOWSON and Howson STREET: Spring House Corporate Cntr, P O Box 457 CITY: Spring House STATE: Pennsylvania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,022A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PILLING DATE:
CLASSIPECATION: 435
CLASSIPECATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/331,381
FILING DATE: 28-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: BAK, MAYE: 31,215
REGISTRATION NUMBER: 31,215
REFERENCE/DOCKET NUMBER: GNVPN.008PCT
TELEPHONE: 215-540-9200
TELEPHONE: 215-540-920
TELEPHONE: 215-540-5818
INFORWATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 19907 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                         ACTTGAAAAGAGTACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                               actricadadadracaccacada 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                S-08-836-022A-10/c
Sequence 10, Application US/08836022A
Setent No. 6001557
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 86.53
Matches 954; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 19477
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                   1020
                                                                                                                                                                                                                                                                            2119
                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                               2179
                        1939
                                                               900
                                                                                                                                                    960
```

13029

479

12909

629

12849

839

```
US-09-091-501B-7
        301
                                                                  361
                                                                                                                               421
                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12548
                                      13268
                                                                                                                                                                                                                                                                                                                                                                                                            12908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12728
                                                             ò
                                                                                              요
                                                                                                                                                        g
                                                                                                                                                                                         ò
                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                    셤
                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13388 TGCCGAGGATACATTGCGAGCACAAGGAGATTTCAAATGATGTTGAAGAAGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13508 TCCTTCACACCATTTGGAAGCTCCCAGAGACAAGTCACTTGACAGTTCATTGATGGAGAC 13449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13568 GAGTTATGCCTTCACACAGGCTGCTTATGTTGCCACCTCTGATTCCACACAGAGCCCCTA 13509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 TGCTGAGGACACATTGCAAGCACACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 CCAGTTTCATACTCATGAGGGGTACATGATTGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 ICCTICACAGCATITIGGAAGCTCCTGAAGACAAGTCATITIGGCAGTICATIGAIGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13448 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 854.2; DB 3; Length 19307;
Pred. No. 1.2e-252;
0; Mismatches 148; Indels 1;
                                                                                                                                                                                                                                     STREET: Spring House Corporate Cntr, P O Box 457
CITY: Spring House
STATE: Pennsylvania
COUNTRY: USA
                                                                                of Pennsylvania
                                                                                                                                                                                                                                                                                                            COMPUTER READALLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPBEATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                             Fisher, Krishna J.
Chen, Shu-Jen
Weitzman, Matthew
OF INVENTION: Improved Adenovirus Virus and
Methods of Use Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GNVPN.008PCT
                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/427,048A
FILING DATE: 21-Oct-1999
CLASSIFICATION: <UNKnown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,022
                                                                               APPLICANT: Trustees of the University Wilson, James M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: CDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 10:
US-09-427-048A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: «Unknown»
ATTORNEY/AGENT INFORMATION:
NAME: Bak, mary E.
REGISTRATION NUMBER: 31,215
REFERENCE/DOCKET NUMBER: GNVPR
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Howson and Howson
RESULT 4
JS-09-427-048A-10/c
^^*...once 10, Application US/09427048A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 19307 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: 215-540-9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 215-540-5818 INFORMATION FOR SEQ ID NO: 10: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53.4%;
                                                                                                                                                                                          SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 86.5
Matches 954; Conservative
                                              No. 6203975
                                                                                                                                                                                          NUMBER OF
                                                                                                                                                           TITLE
                                                                  GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ਨੋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨ੍ਹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ጵ
```

```
12849
                                                                                                                      13209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12848 AGATOGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTACAAGATAT 12789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12669
13328 ACAGTTTCATGCTCATGAGGGATTCATGATGGATCTGACATCTCATCAAGGACTTGTTGG 13269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                839
                                                                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13208 AGCTGAAGTGCAAGAACAAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13028 GCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12668 Grchagrcricachanthrithananthanaharhanhanhanhanhanhandcharchr
                                                                                                     13088 AAAAGAACTAGATGACTGGTTAACAAAAACTGAAGAGAGAAGTAAGAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12788 retretaaarisseascarritracisaasaacasiseeriritrastacardserriteksa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCAAACTGTATTCACTCAAACAAGATCTTTCTATCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                             TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                       <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                          13148 TAGCATGGAAAAACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 7, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Tinaley, Vonathon M
APPLICANT: Davies, Ray E
ITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT FILING DATE: 1998-06-18
PRIOR PELLING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12488 ACTIGAAAGAGITCAGCACAAA 12466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1080 ACTIGAAAAGAGIACAGCACAGA 1102
```

```
1693
                                                                                                                                                                                                                                              1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           974 cigacgiedeciecieciededadadadaciiceaggagdadangacairicigardan 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             914 Agcaccercácricaagradacaragarrricaacaacracaaragcacradagagagaga 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCC 283
                          823 AGTGCATGGCTTTCAGAAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAA
                                                                       AAGAAAAAGCAATCCATGGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTG
                                                                                                                                                                                                                                                                                                      1754 Argaagagagaacrergaareaacreagargagaragaragaccaggargagaccaarracte
                                                                                                                                                                                                                                                                                                                                                            AAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                  1814 AGTAATCCCAAGGCATCTAAGAAGATGACAGTGACTCTGAGGAGGTAACACAGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          104 AGTICATIGAIGGAGAGIGAAGIAAACCIGGACCGITAICAAACAGCTITAGAAGAAGIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        164 TIATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACACAAGGAGATTTCTAATGAT
                                                                                                                                        GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: Description of Artificial Sequence: Full length OTHER INFORMATION: utrophin construct
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 10320;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1874 GATTCTCTGGTTCAGAGACTCGAAGACTCTTCTAACCAG 1912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1063 GATAATTTAGTCCAAAAACTTGAAAAGAGTACAGCACAG 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20.8%; Score 332.6; DB 4;
59.0%; Pred. No. 1.2e-91;
tive 0; Mismatches 409;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; LOCATION: (724)...(758)
; OTHER INFORMATION: Precise residue is left open
US-09-091-501B-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 9, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Tinsty Unnathon M
APPLICANT: Tinsty, Wonathon M
APPLICANT: Davies, Ray E
ITTLE OF INVENTION: Utrophin gene expression
FILE REPERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1990-06-18
PRIOR PAPLICATION NUMBER: PCT/GB96/03156
PRIOR PAPLICATION NUMBER: GB 9525962.8
PRIOR PILING DATE: 1996-12-19
PRIOR APPLICATION NUMBER: GB 961579.9
PRIOR APPLICATION NUMBER: GB 961579.9
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 589; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: CDS
LOCATION: (11)..(10312)
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                        883
                                                                                                                                                                                                                                                       943
                                                                                                                                                                                                                                                                                                                                                                  1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                      ò
                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     974 creacerdecrerececedededecrerrecadedadadardacarricidardar 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1334 cacadeandeangecerrecechecengandachecerecerecengeangenen 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1454 cacardoridoridatoratoaaacadrodosadoroccacadoricricionadan 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1574 AACAGGTTGCAAGAAATCAGTATTCTGTGGCAGAATTATTGGAAGAGCAGTGTCTGTTG 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .034 GrochadaaGrohadaGcaGrirGcraccardaaacrirTrarGarGcaGcrGaCAGCA 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1154 crerchghgghgghgghgrrrghghrrcchgghachghrghccrrgcrghhrachadaghg 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1214 gaggggchtccdddrgaagagcardgaagagcagcrccggcrgchgaggagcgrtcrgargaag 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1274 checadadadadedechecadechecteredadechecerededededadadedederr 1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104 AGTICATIGAIGGAGAGIGAAGIAAACCIGGACCGITAICAAACAGCITITAGAAGAAGIA 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          914 AGCACCGTCACTGAAGTGGACATGGATTTGGACAGCTACCAGATAGCGCTAGAGGAAGTG 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   164 TIATCGIGGCITCITICIGCIGAGGACACATIGCAAGCACAAGGAGAGATITCTAAIGAT 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GIGGAAGIGGIGAAAGACCAGIIIICAIACICAIGAGGGGIACAIGAIGGAIIIIGACAGCC 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAA 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       344 TTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATGCCTCAGGGTAGCTAGCATGGAAAAACCAAAGCAATTTACATAGAGTTTTAATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCCAGAATCGA-AACTGAAAGAGTTGAATGACTGGCTAACAAAAAAAGAAGAAGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               523 AGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAACGCCAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             583 CAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1394 GAACATAAAAGTTTGCAAAATGACCTTGAAGCTGAACAGGTGAAGGTAAATTCCTTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        643 CACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1514 cagriacadaaacroocroaccoroocacacacrorardecocroocacroaadaacorroo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GITCITITACAAGACAICCITCICAAAIGGCAACGICTIACIGAAGAACAGIGCCITITI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      703 CAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gapa
                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 20.8%; Score 332.6; DB 4; Length 6045; Best Local Similarity. 59.0%; Pred. No. 8.2e-92; Matches 589; Conservative 0; Mismatches 409; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (724)..(758)
OTHER INFORMATION: Precise residue is left open
S-09-091-5018-7
PRIOR FILING DATE: 1995-12-19
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SEQ ID NO 7
LENGTH: 6045
                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (11) .. (6037)
                                                                                                                                                                                                                                                                                                                                          NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       464
                                                                                                                                                                                                                                                                                                               FEATURE
```

음 중 음

අ දු

8 8 8 8

à

```
1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAAC 1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cercceardeaaacaachacaecercaerreareaecerraaecerraaceecrceaecarec 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Actraccarritorgargiscacristcaargaaaaarroccaggccrisgaacagarcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1022 GGGCATGGAGGAACTAAGCACTACTCTGAGCCAAGCTGAGGGAGTCCGAGCCACTTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAA
                                                                                                                                                                                                                                                                                                                                                                                              1131 GGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1082 ececatresesateretroarrearreacreecasaseacaeacaseseserrarraasererr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caaalgaagaatricrccccargaaagarggagraagraaagruggrgaargargarcrggccaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ccaccedaaciriraagccraagacacacacacacirircrcreecreerereracacaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1442 ATGCTGGGACCATCCCAAGATGACAGAGTTATACCAAACCCTAGCTGATCT 1492
                                                                                                                                                                                                                                                                               Length 3915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1551 TIGCIGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT
                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                                                                               Score 234.2; DB 4;
Pred. No. 1.6e-61;
0; Mismatches 148;
                                                                                                                                            FEATURE:

NAME/KEY: misc_feature

OTHER INFORMATION: Incyte ID No. 6673549 290344.1
US-09-976-594-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
ITLE OF INVENTION: Utrophin gene expression
FILE REPERENCE: 620-42
CURRENT FILING DATE: 1996-06-18
PRIOR APPLICATION NUMBER: US/09/091,501B
PRIOR APPLICATION NUMBER: GE 952596.8
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR PILING DATE: 1996-12-19
PRIOR PILING DATE: 1996-10-24
NUMBER OF SEC ID NOS: 15
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5, Application US/09091501B Patent No. 6518413
                                                                                                                                                                                                                                                                                  14.6%;
llarity 68.6%;
Conservative
                                                                                         TYPE: DNA ORGANISM: Homo sapiens
     Program
                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 323; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: DNA
; ORGANISM: Rattus sp.
US-09-091-501B-5
SOFTWARE: PERL P
SEQ ID NO 93
LENGTH: 3915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1431
                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Furness, Michael
APPLICANT: Furness, Michael
APPLICANT: Buchbinder, Jenny
TITLE BUCHDING GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
TITLE REPERENCE: PA-0041 US
CURRENT APPLICATION NUMBER: US/09/976,594
CURRENT FILING DATE: 2001-10-12
PRIOR PELING DATE: 2000-10-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1003 AAGAATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGG 1062
                                                                                                              .094 caccadadedadedradadadadeneeneeneenadedadeeneardadadadadadadadan 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .454 CACATGGTGGTGGTTGTGGATGAAAACAGTGGGGAGAGTGCCACAGCTCTTCTGGAAGAT 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        943 AAGAAAAAGCAATCCAFGGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTG 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1754 ATGAAGAGGCAGACTCTGGATCAACTGAGTGAGATTGGCCAAGATGTGGGCCAATTACTC 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1814 AGTAATCCCAAGGCATCTAAGAAGATGAACAGTGACTCTGAGGAGGTAACACAGAGATGG 1873
     1034 GTCGAAGAAGTCAAAGAGCAGTTTGCTACCCATGAAACTTTTATGATGGAGCTGACAGCA 1093
                                                                                                                                                                                                                            1154 CTGTCAGAGGAGGAGGAGTTTGAGATCCAGGAACAGATGACCTTGCTGAATGCAAGGTGG 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1514 CAGTTACAGAAACTGGGTGAGCGCTGGACAGCTGTATGCCGCTGGACTGAAGAACGTTGG 1573
                                                                                                                                                                                                                                                                                     404 GAATGCCFCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGAT 463
                                                                                                                                                                                                                                                                                                                                                                                                    CTCCAGAATCGA-AACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACA, 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      643 CACATGGTGGTGGTAGTTGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              823 AGTGCATGGCTTTCAGAAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAA 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          942
                                                                 284 CATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAA 343
                                                                                                                                                                          344 TTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGG
                                                                                                                                                                                                                                                                                                                                           1214 GAGGCGCTCCGGGTGGAGAGCATGGAGAGGCAGTCCCGGCTGCACGCTCTGATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          583 CAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAAGGTCAATTCTCTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                763 GITCITITACAAGACATCCTICTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .634 GAGGCTTGGCTCACCGAAAAGGAAGAGCTTTGAATAAAGTTCAAACCAGCAACTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCAAAATGAAATGTTATCAAGTCTTCAAAAACTGGCCGTTTTAAAAAGCGGGATCTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               523 AGGAAAATGGAAGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAACGCCAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1394 GAACATAAAAGTTTGCAAAATGACCTTGAAGCTGAACAGGTGAAGGTAAATTCCTTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1874 GATTCTCTGGTTCAGAGACTCGAAGACTCTTCTAACCAG 1912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1063 GATAATTTAGTCCAAAAACTTGAAAAGAGTACAGCACAG 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 93, Application US/09976594
Patent No. 6673549
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -09-976-594-93
                                                                                                                                                                                                                                                                                                                                                                                                 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF
```

ብ

ਨੇ

ਨੇ

ጽ

გ

ጵ

ጽ

ਨੇ

```
200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-091-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64 AGCTGAACAGGTGAAGGTAAATTCCTTAACTCACATGGTGGTGATTGTGGATGAAACAG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           124 regechenerecenchenterrerechadarentaranarakandegenengene 183
                                                                                                                                                                                       624 CAGGGTCAATTCTCTCACACACACGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGC 683
                                                                                                                                                                                                                                    76 GAAGGTGAATTCCTTAACTCATATGGTGGTGATTGTGGATGAAAACAGTGGGGAGAGGCC 135
                                                                                                                                                                                                                                                                                   684 AACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAG 743
                                                                                                                                                                                                                                                                                                                                136 CACAGCTGTTTTGGAAGATCAGTTACAGAAACTGGGTGAGCGCTGGACAGCTGTATGCCG 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                       552 TGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 reaccinecercecinedaaacinecircaasaacaraaaaninecaaaareaccinea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      612 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAAGAATCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                672 TGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC
                                                                                          564 CCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
Score 79.4; DB 4; Length 200;
Pred. No. 1.4e-14;
0; Mismatches 66; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 78.6; DB 4;
Pred. No. 2.4e-14;
0; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Tinsley, Jonathon M
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: ULrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT APPLICATION NUMBER: US/09/091,501B
RIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SEQ ID NO 4
LENGTH: 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4, Application US/09091501B Patent No. 6518413 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          732 AAACATCTGTAGATGGA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184 AGCTGTATGCCGCTGGA 200
  5.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative
  Query Match
Best Local Similarity 64.37
Matches 119; Conservative
                                                                                                                                                                                                                                                                                                                                                                                744 ATGGA 748
                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Mus sp.
S-09-091-501B-4
```

Sequence 6, Application US/09091501B

ESULT 10 IS-09-091-501B-6

```
512 ACAAGAACAAGTCAGGGTCAATTCTCTCACACATGGTGGTGGTAGTTGATGAATCTAG 671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 672 TGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC 731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124 redrekangedektakanderanceradakakekantrakanakerredrekakeketadak 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 reargreaarcreracaaagerecragaagacaraaaagrregeaagreres 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552 IGAICITGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64 GGCTGAACAGGTGAAAGTAAATTCACTAACTCACATGGTGGTCATTGTTGATGAAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 78.6; DB 4; Length 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.4e-14;
hea 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 14, Application US/08232463

Patent No. 5670367

GENERAL INFORMATION:
APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKWER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: ALTICANT: SCHEIFLINGER, F.
CORRESPONDENCES: 52
CORRESPONDENCE ADDRESS:
APPLICANT: TITUSIES, CONTACTOR APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT FILING DATE: 1988-06-18
FRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR REPLICATION NUMBER: GB 961579.9
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
SOFTWARE: PALCHING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 2.4e-0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSEE: Foley & Lardner
T: 1800 Diagonal Road, Suite 500
Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STAIL.

COUNTY: USA
ZIP: 22313-0299
ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDLUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

OFFWARE: Patentin Release #1.0, Ve-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
CLASSIFICATION: 435
PROCA PELLOATION DATA:
APPLICATION NUMBER: US/07/935,313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184 AGCAGTATGCCGTTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    732 AAACATCTGTAGATGGA 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
STREET: 18
```

```
645 AGATACGATCGGAGGAATTGTAGAAGTGCTCGFTGGAGGCGTTCCAGCTGGATTAGGAAG 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             705 cracéracadracacacacacada a de contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra contra con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        453 TITITAATGGATCTCCAGAATCGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      585 IGTIGAICCAGCAGTIGAGCAAAGAATAAAAGATITGAICGAICAGACAAAGAAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            513 AGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       573 CCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
2.7%; Score 42.8; DB 4; Length 1
Best Local Similarity 49.5%; Pred. No. 0.0096;
Matches 110; Conservative 0; Mismatches 112; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           633 TICICICACICACATGGIGGIGGIAGITGAIGAAICIAGIGG 674
                                                                     CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/107,532A
FILING DATE: 30-Jun-1998

PRIOR APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/05151
FILING DATE: July 2, 1997
ATTORNEY/AGNT INFORMATION:
NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REGISTRATION NUMBER: 40,489
RETERENCE/DOCKET NUMBER: GTC-012
TELEPHONE: (781)893-507
TELEPHONE: (781)893-507
INFORMATION FOR SEQ ID NO: 1186:
SEQUENCE CHRACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                )

NAME/KEY: misc_feature

LOCATION: (B) LOCATION 1...1179

SEQUENCE DESCRIPTION: SEQ ID NO: 1186:
US-09-107-532A-1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 69, Application US/09620312D Patent No. 6569662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 1179 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tang, Y. Tom
Liu, Chenghua
Asundi, Vinod
Zhang, Jie
Ren, Feiyan
Chen, Rui-hong
Zhao, Qing A.
Wehrman, Tom
Xue, Aldong J.
Yang, Vonchel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .09-620-312D-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULY: 14
108-09-107-532A-1186
; Sequence 1186, Application US/09107532A
; Sequence 1186, Application US/09107532A
; Patent No. 6582375
; GENERAL INFORMATION:
; APPLICANT: Lynn A Doucette-Stamm and David Bush
; APPLICANT: Lynn A Doucette-Stamm and David Bush
; TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO

ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITIAAIGGAICICCAGAAICGAAACIGAAAGAGIIGAAIGACIGGCIAACAAAACAGA 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             213 ITTCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGG 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     273 ATTTGACAGCCCATCAGGCCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTG 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            333 GAACAGGAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAA 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                513 AGAAAGAACAAGGAAAATGGAAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACG 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           573 CCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAA 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
4.7%; Score 74.6; DB 1; Length 7
Best Local Similarity 5.6%; Pred. No. 5e-12;
Matches 23; Conservative 236; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEB: GENOME THERAPEUTICS CORPORATION
STREET: 100 Beaver Street
CITY: Waltham
STATE: Massachusetts
COUNTRY: USA
                                                     EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
COMPUTER: PC
                                                                                                                                                                                                                                                                                                                                   TELEX: 899149
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOMMOTOTION
FILING DATE:
APPLICATION NUMBER: EP 91 114
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29, 768
REFERENCE/DOCKET NUMBER: 3047
TELEPHONE: (703) 836-9300
TELEPHONE: (703) 836-9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; IMMEDIATE SOURCE:
; CLONE: pTZgpt-F1s
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
```

ò 임 ò

Mon Apr

ö

```
1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3818
                                                                                                                                                                                                                                                                                                              1489 TGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 1548
                                                                                                                                                                                                                                                                                                                                                                                                                    1733 resensearscriacacacasarssaricarstraticaricarcacacarstratural researca researca researca researca researca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3639 caaddagrigcaccaddagadagadagacciddagadagadagagagaraggricaddagag 3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1293 CAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAG 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3819 GCTGGAGCGCGCGCGCGCTGGCTCGCTGCCCCGGAGGCAGAGGCAGTGCGCCG 3878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1353 CACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGT 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3879 geoccinedacidentechadadecerendeceredacidedadecinecedadeceaced 3938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1116 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3699 gerreceaeceargeagacagacaagcaacaarcagrrigcagcagcagcaacaacaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1233 CGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1176 CAAGGGA---TCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3759 cadadadecadescereceses de cadesceses en cadesceses es cadas de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades de cades d
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1549 ACTIGCIGGGACCATCCCAAAAIGACAGAGCICIACCAGICITTAGCIGA 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1793 Acgrecredanteacecegnaareacececenaacenerererendeaa 1842
                                                                                                                                                                                                       ,
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            m
                                                                                           Query Match 2.7%; Score 42.8; DB 4; Length 2574; Best Local Similarity 61.8%; Pred. No. 0.016; Matches 68; Conservative 0; Mismatches 42; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 2.7%; Score 42.8; DB 3; Length 7812; Best Local Similarity 47.9%; Pred. No. 0.036; Matches 156; Conservative 0; Mismatches 167; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: SOlimena, Michele
TITLE OF INVENTION: INTERACTING POLYPEPTIDES FOR
TITLE OF INVENTION: INTERACTING POLYPEPTIDES FOR
TITLE OF INVENTION: AUTOANTIGENS OF AUTOIMMUNE DISEASES;
FILE REFERENCE: 101918-200 (OCR-941)
CURRENT APPLICATION NUMBER: US/09/368,590
CURRENT FILING DATE: 1999-08-04
EARLIER APPLICATION NUMBER: 60/095,657
EARLIER FILING DATE: 1998-08-07
NUMBER OF SEQ ID NOS: 8
SOFTWARE: FASESEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3939 GCAGGTGCTGGACGCCGCCTTCCAGG 3964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1413 CAGGCAGCTGCATGAAGCCCACAGGG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-368-590-1
; Sequence 1, Application US/09368590
; Patent No. 6187563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ...(1023)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: unsure
LOCATION: (2266)...(2268)
US-09-368-590-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ... (102)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(6
NAME/KEY: unsure
LOCATION: (100)...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: unsure LOCATION: (1021).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Human
US-09-668-313A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S-09-668-313A-10
Sequence 10, Application US/0966313A
Patent No. 6503756
Patent No. 6503756
Patent No. 6503756
APPLICANT: Brett P. Monia
APPLICANT: Susan M. Freitx
APPLICANT: Jacqueline Wyatt
TITLE OF INVENTION: ANTISENSE MODULATION OF SYNTAXIN 4 INTERACTING PROTEIN EXPRESSION
FILE REPRESENT APPLICATION NUMBER: US/09/668,313A
CURRENT APPLICATION NUMBER: US/09/668,313A
CURRENT FILING DATE: 2000-09-22
NUMBER OF SEQ ID NOS: 247
ENGINE OF 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1233 CGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGT 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1293 CAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAG 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1353 CACTOTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGT 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 115 geréceáergedéargédagadagadagadagantrecagedegédégadagadar 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 235 ecracidade de cadade de cada de confección de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         295 GGGCCTGGAGCAGCTGCAGAGCGCCTGGGCCGGACTGCGGGAGGCTGCCGAGGCACGCA 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1116 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55 caaddagrigeaccaddregeacdaccaedacaacaadaadaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1176 CAAGGGA----TCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCAAGATCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    175 charargarccadddccrocdddadarccaddcargdgccdccccccccrdaagagar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.7%; Score 42.8; DB 4; Length 1690; 47.9%; Pred. No. 0.012; tive 0; Mismatches 167; Indels 3
                            APPLICANT: ""...", ZINWEI APPLICANT: WANG, ZINWEI APPLICANT: WANG, ZINWEI APPLICANT: John Tillinghast APPLICANT: John Tillinghast APPLICANT: John Tillinghast TITLE OF INVENTION: No. 6569662el Nucleic Acids and TITLE OF INVENTION: No. 6569662el Nucleic Acids and TITLE OF INVENTION: POlypeptides FILES REREARCE: 784C192B CURRENT PEDLICATION NUMBER: US/09/620,312D CURRENT FILING DATE: 2000-07-19 PRIOR APPLICATION NUMBER: 09/52,317 PRIOR PILING DATE: 2000-04-25 PRIOR FILING DATE: 2000-01-21 NUMBER OF SEQ ID NOS: 1105 SOFTWARE: DE FL-Genes Version 1.0 LENGTH: 1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1413 CAGGCAGCTGCATGAAGCCCACAGGG 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            355 GCAGGTGCTGGACGCCGCCTTCCAGG 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 47.9
Matches 156; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
LOCATION: (218)...(1891)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
LOCATION: (128)..(1522)
S-09-620-312D-69
           Wang, Dunru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
```

1;

Search completed: April 5, 2004, 08:25:02 Job time: 79.6428 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd. W nucleic - nucleic search, using sw model	on: April 4, 2004, 11:55:32; Search time 413.121 Seconds (without alignments) 16463.377 Million cell updates/sec	<pre>itle: US-09-845-416-14_COPY_900_2500 srfect score: 1601 squence: l gagctatgcctacacacaggtaccagtctttagctgacct 1601</pre>	coring table: IDENTITY NUC Gapop 10 0, Gapext 1.0	earched: 3373863 seqs, 2124099041 residues	otal number of hits satisfying chosen parameters: 6747726	inimum DB seq length: 0 aximum DB seq length: 200000000
A nuc	no on:	itle: erfec equen	corin	sarch	otal	inim axim

geneseqn2001bs:* geneseqn2002s:* geneseqn2003as:* geneseqn2003bs:* geneseqn1980s:* geneseqn1990s:* geneseqn2000s:* geneseqn2001as:* N_Geneseq_29Jan04:* 1: geneseqn1980s:* genesean2003cs:* genesean2004s:* atabase :

ost-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Aad37242 Human dys	Aad37260 Adeno-ass	Abk81997 DNA encod	0	Aad37259 Adeno-ass	30	-	4		-	Abk82002 DNA encod	38	CDNA	Abt10904 Human bre	Abn95786 Gene #228	Abs69900 Human dys	Abs70403 Human bon	Aad37229 Human dys		A rod	248567 A rod sho	Aad37237 Human dys	37257 Adeno-ass
	Des	Aac	Aac	Ŕ	Aac	Aao	Aac	Aac	Aa	ą	Ŷ	Ą	Aaı	\$	Ą	Ą	ą	ã	Aac	Aac	Aa	Aa	Aac	Aad3
SUMMARIES	JD	AAD37242	AAD37260	ABK81997	AAD37240	AAD37259	-	AAD37255	AAD06794	ABK82000		ABK82002	AAN90338		ABT10904	ABN95786	ABS69900		•	AAD37231	AAZ48568	AAZ48567	AAD37237	AAD37257
	DB	9					9																	
	Length	3446	4414	5417	$\vec{}$	4476	4182	5149	95	68	24	4	92	13957	95	395	395	13977	S	1991	0	0	3858	N
	% Query Match	0	99.3	88.7	74.5	74.5			68.2			68.1	68.1	68.1	68.1	68.1	68.1	œ.	•	67.8	58.2	4.	ω.	53.9
	Score	0	σ,	ö	σ _λ	σ ₁	1102	1102	1092.4	1001	1001	1091	1091	1091	1001	1091	1091	1091	1087.8	1085.8	932	٠	863	9
	esult No.	i	7	m	4	'n	w	7	æ	σı	10	11	12	13	14	15	16	17	18	19	20	21	22	23

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DWD) and Becker muscular

Example 1, Page 53-54; 71pp; English.

gene.

63	64	Abk81960 cDNA enco	Abi99799 Mouse isc		Abk81998 DNA encod	80	Aad37258 Adeno-ass	'n	Aan97129 Partial s	4	Aad37256 Adeno-ass	2 Adeno	<u>го</u>	Abk81999 DNA encod	Aaz48569 A rod sho	41 Human	Aad37232 Human dys	3 Human	Aad37239 Human dys	Aaz48566 A rod sho	Acd19399 cDNA enco	
AAD37263	AAD37264	ABK81960	ABI99799	AAT27558	ABK81998	AAD37238	AAD37258	AAV18885	AAN97129	AAD37234	AAD37256	AAD37262	AAD37235	ABK81999	AAZ48569	AAD37241	AAD37232	AAD37243	AAD37239	AAZ48566	ACD19399	
9	9	9	ø	7	9	9	ø	N	н	9	9	9	ø	ø	m	9	ø	ø	φ	ന	7	
4848	5060	381	13815	19307	5339	3531	4498	13815	3275	3999	4966	4990	1667	5462	4075	1821	2169	1434	1340	3747	9195	
9. 0.	o. و.	3.4	т М	ω.	33.3	ъ.	3.2	ď	ď	۲.	7.9	6.7	۲.	5.3	4.1	1.4	1.4	1.3	æ	'n.	i.	
S	ഗ	Ŋ	S	Ŋ	ß	ហ	Ŋ	Ŋ	ഹ	4	4,	4	4,	4	4	m	m	m	N	~	N	
863	863	4	854.2	4	œ	851.2	851.2	846.2	843	766.4	766.4	766.4	765	732.2	706.8	502.6	502.6	501	450	409.2	349.4	
					6					34	35	36	37	38	39	40	41	42	43		45	
				O																		

ALIGNMENTS

```
New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                               Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                            Human dystrophin minigene delta3447.
               AAD37242 standard; DNA; 3446 BP.
                                                                                                                                                                                                  27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                      28-APR-2000; 2000US-0200777P.
                                                        21-AUG-2002 (first entry)
                                                                                                                                                                                                                                                                               WPI; 2002-049342/06.
                                                                                                                                                           WO200183695-A2.
                                                                                                                                                                                                                                         (XIAO/) XIAO X.
                                                                                                                                         Homo sapiens,
                                                                                                                                                                              08-NOV-2001.
                                      AAD37242;
                                                                                                                                                                                                                                                             Xiao X;
RESULT 1
          AAD37242
```

2039 1200 1260 2159 1320 2219 1380 2279 1440

NNNNNN

ă

ŏ

≿

ŏ ≥ ă ≿

```
ATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGAC 2459
1800 TCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGAAAAGCAATCCATG 1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human, dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITGGICCAGCATCICAGCACTITCITICCACGICTGCAGGGICCCTGGGAAGAGCC
                                                                                                                       CAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAA
                                                                                                                                                                                                   1980 crigadadescracacacacaccerredadescrecagedacricadesceacear
                                                                                                                                                                                                                                                                                                          GATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAA
                                                                                                                                                                                                                                                                                                                              GATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                2160 ATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2220 TTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITIGGICCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGAC
                                 GGCAAACTGTATTCACTCAAACAAGATCTTTCTATCAACACTGAAGAATAAGTCAGTGACC
                                                                  1860 GGCAAACTGTATTCACTCAACAAGATCTTTCTTTCAACACTGAAGAATAAGTCAGTGACC
                                                                                                 CAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGGATAATTTAGTCCAAAAA
                                                                                                                                                                     CTTGAAAAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGAT
                                                                                                                                                                                                                                                                       ATTGCGCCTCTGAAAGAAAGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGG
                                                                                                                                                                                                                                        GAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 2500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Adeno-associated virus vector plasmid, AAV-MCK-3447.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD37260 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chimeric.
                                                                                                   1021
                                                                                                                                      1920
                                                                                                                                                                                                                                                                                                            1201
                                                                                                                                                                                                                                                                                                                                               2100
                                                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37260;
                                                                                                                                                                       1081
                                                                                                                                                                                                                                           1141
                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
AAD37260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ठे हे ठे
                                                                                                                                                                                               g
                                                                                                                                                                                                                             $ B
                                                                                                                                                                                                                                                                                                   8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1679
                                                                                                                                                                                                                                                                                           1019
                                                                                                                                                                                                                                                                                                                                                                1079
                                                                                                                                                                                                                                                                                                                                                                                                                                    1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGAA 1739
                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1320 ТАĞСАТĞĞAAAAĞAAAĞĞAATTTAÇATAĞAĞTTTTAATĞGATCTCCAĞAAATGĞAAĞTĞ 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTTA 1799
                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          960
                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                         959
                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                        9
dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin miniagene delta3447 containing nucleotides 1-1992 (N-terminus, hinge H1 and rods R1, R2 and R3), 8749-10227 (rod R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAAATGGAGGAAAAGA
                                                                                                                                                                                                                           GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                            TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                           recriteaeaecarrigaaaecrecreaaeaeaaeaeaearearrigeeaerrearreareaaeae
                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGGTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                    recreageacacarrecaageacagaagaagarrreraargareregaagreaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGITICATACICATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccadirircanacticandaddddatadandantadaddcccancadddcccdccdcndd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATCGAAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACATAAGGTGCTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATCGATGGGCAAACATCTGTAGATGGACAGAGACCGCTGGGTTCTTTTACAAGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGTTA
                                                                                                                                                                                          GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                       ö
                                                                                                                    Query Match 100.0%; Score 1601; DB 6; Length 3446; Best Local Similarity 100.0%; Pred. No. 0; Marches 1601; Conservative 0; Mismatches 0; Indels 0;
                                                                                    Sequence 3446 BP; 1074 A; 766 C; 787 G; 819 T; 0 U; 0 Other;
                                                                                                                                                                                                                           006
                                                                                                                                                                                                                                                                                             . 096
                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                      1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
```

<u>≻</u>. ð > ŏ > ď

≿

```
WPI; 2002-049342/06
×
XIAO
```

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1; Page 65-66; 71pp; English

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, il and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene in operable linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence

Sequence 4414 BP; 1255 A; 1075 C; 1086 G; 998 T; 0 U; 0 Other;

1836 2016 2136 2196 1716 1896 1956 2076 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 2256 rccrrcacaccarrragaagcrccrgaagacaacaacarrragacacrrcarrgargaagaga 1776 240 180 120 300 360 420 479 539 599 9 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGATGCCTCAGGGTAGC TAGCATGGAAAAACAAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAGAACAAGGAAAAATGGAGGAAGA GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA TECTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGGAAAG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1; Length 4414; 0; Indels . 9 띰 0; Mismatches 0 Query Match

99.3%; Score 1590;
Best Local Similarity 99.9%; Pred, No. 0;
Matches 1601; Conservative 0; Mismatche Н 1657 61 1717 1777 1837 1897 1957 2017 2077 2137 2197 009 121 181 241 361 421 480 540 301

1499 1019 1079 1139 2796 1199 2856 1259 2916 1319 29.76 1379 3036 1439 3156 2436 2496 2556 2616 2736 899 959 2437 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 2557 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAGCAATCCAT GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2617 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA CGATCTCCTCATTGACTCTCCCAGGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 2857 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGAGA 1260 AATTGCGCCTCTGAAAGAAAGGGGGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC AATTGCGCCTCTGAAAGAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 1320 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 2977 rrresscarrcascrcrcacceraraccrcascacrcrssaasaaccrsaacacc 1440 CTTTGGTCCAGCATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 1500 CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGA 3157 CATCTCGCCAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGA TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAAGAACAACTTAAAGGTATTGGG 2377 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT 840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT 900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAGCAATCCAT 2677 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1080 ACTIGARARGAGIACAGCACAGACCCTIGAAAGACTCCAGGAACTICAAGAGGCCACGGA 2737 ACTTGAAAAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 1140 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCCGTGGG 2797 TGAGCTGGACCTCAAGCTGCGCCGAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 3037 gaadcincingcaddingdcdingaadcdaagicaddcadcingcaigaagccadaga TTTAGTGCATGGCTTTCAGA AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG AGATOGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT 3258 1601 CCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTGACCT 3217 ccarccaaaargacagacrcraccagrcrrragcrgaccr 099 2317 720 2497 1020 1200 2917 1380 3097 1560 780 960 g ò 셤 ò 임 δ 셤 δ 용 8 ద 8 D, ò g ઠે 유 \$ A 8 8 8 원 ò 셤 8 셤 ઠે g 8 ò

ABK81997 standard; DNA; ABK81997 RESULT 3
ABK81997
ID ABK8
XX
AC ABK8

```
1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2478
                                                                                     1578
                                                                                                                                                                                                                                                                                                                                                                                                                                       1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1343
                    1518
                                                                                                                                                         1638
                                                                                                                                                                                                                            1698
                                                                                                                                                                                                                                                                                               1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1283
                                                                                                                                                                                                                                                               629
                                                                                                                                                                                                                                                                                                                                  719
                                                                                                                                                                                                                                                                                                                                                                                                      779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   959
                                                                                                                                                                                            599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              899
AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATGCTCAAGAGGAACTTCCACCACCTCCCCAAAAGAAGAGGCAGATTACTGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                               TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                          CCTTCTCAAATGGCAACGTCTTACTGAAGACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGAAGATGCAGTGAACAAGATTCACACAGCTGGCTTTAAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccagaagaggaaggargggraaacrirgcccggrgrrgggaraarragrccaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGACAACTGTAATGGAAACAGTAACTACGGTGACCACAAGGGAACAGATCCTGGTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2359 retrigadadetecaddaderrendaddeceaeddargagerigadeteandadeecea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCTTGACTCTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             agergaggrearcaaggarcergecagecegregecarcercarrearrererea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAAGAGAGACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                           GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                            GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                      AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTGAAAGACTCCAGGAACTTCAAGAGGCCCACGGATGAGCTGGACCTCAAGCTGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTIGAAAAGAGTACAGCACAGA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2179
                      1459
                                                        421
                                                                                         1519
                                                                                                                           480
                                                                                                                                                            1579
                                                                                                                                                                                            540
                                                                                                                                                                                                                                1639
                                                                                                                                                                                                                                                               009
                                                                                                                                                                                                                                                                                                   1699
                                                                                                                                                                                                                                                                                                                                    099
                                                                                                                                                                                                                                                                                                                                                                      1759
                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                           1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1284
                                                                                                                                                     Dp
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 성 암
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      중 점
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95
PP 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                     g
                                                                                                                         ð
                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                        ò
                                              ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 AACTGAAGTACAAGAGCAGATGAATCTCTCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for therapeutic application and in the preparation of a composition (DMD). This sequence represents a mini-dystrophin sequence of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09
                                                                                                                                                                                                                                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .219 idaadraaacciggaccerraicaaacacciriragaagaagrariarcerrcrirc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGTTTCATACTCATGAGGGGTACATGATGGATTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1279 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                           A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                    Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 5417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2; Indels 157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5417 BP; 1700 A; 1192 C; 1182 G; 1343 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 6;
                                                        DNA encoding mini-dystrophin protein deltaR4-R23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1420.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 12; 145pp; English
                                                                                                                                                                                                                                                                                                   2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 91.0%;
Matches 1599; Conservative
                                                                                                                                                                                                                                                                   04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                                                                                                          ŝ
                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                          Chamberlain JS, Harper
                                                                                                                                                                                                                                                                                                                                      (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                            WO200229056-A2
                                                                                                                                                                                                                                                                                                   06-OCT-2000;
                      13-AUG-2002
                                                                                                                                                                                                                                11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
```

ዺ

ጵ

8

Š

g

ሯ

g

à

g

ਨ੍ਹ

a

Š

ਨ੍ਹੇ

Ŋ

```
1403
                                                                                                                     2658
                                                                                                                                                                                 1463
                                                                                                                                                                                                                                       2718
                                                                                                                                                                                                                                                                                                    1523
2539 GAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTA 2598
                                                                                                                                                                                                                                                                                                                                                      1524 CTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTA 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2779 CTATATCAACCACGAGACTCAAACAACTIGCIGGGACCAICCCAAAAIGACAGAGCICIA 2838
                                                                                                  2599 TAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGA
                                                                                                                                                                                                                                    2659 GGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTT
                                                                                                                                                                                                                                                                                                1344 TAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGA
                                                                                                                                                                              1404 GGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2839 ccadrcrrradcrdaccr 2856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1584 CCAGTCTTTAGCTGACCT 1601
                                                                                                                                                                                                                                                                                                1464
```

AAD37240 standard; DNA; 3510 21-AUG-2002 (first entry) AAD37240; SULT 4 D37240

Human dystrophin minigene delta3510.

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.

Homo sapiens.

08-NOV-2001

WO200183695-A2.

27-APR-2001; 2001WO-US013677.

28-APR-2000; 2000US-0200777P

(XIAO/) XIAO X.

Xiao X;

WPI; 2002-049342/06.

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1; Page 51-52; 71pp; English.

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains or separts, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operable linkage with an expression element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is-human dystrophy minigene deltesi310 contraining nucleocides 1-168 (N-terminus, hinge H1 and rods R1 and R2), 8407-10227 (rods R23 and R24, hinge H4 and comain) and 11047-11058 (dystrophin last 3 amino acids)

	lence 3510 BP; 1073 A; 787 C; 828 G; 822 T; 0 U; 0 Other
Ouer Best Matcl	ry Match L Local Similarity 84.7%; Pred. No. 0; ches 1411; Conservative 0; Mismatches 190; Indels 64; Gaps 4;
상 음	1 GAGCTAIGCCTACACACAGGTGCTTAIGTCACCACTCTGACCCTACACGGAGCCCATT 60
\$ Q	61 TCCTTCACAGCATTTGGAAGGTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
ζς q _Ω	121 IGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
o S S S	181 IGCTGAGGACACTTGCAAGCACACAGGAGATTTCTAATGATGTGGAAGTGGTGAAGA 240
o O O	241 CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
SS QS	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
70 qq	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
ZZ QZ	421 TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479
S qa	480 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 539
δς Dp	540 GCCTCTTGGACCTGATCTTGAAGACCTAAAAGGCCAAGTACAACAACATGATTCA 599
QY Db	600 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACATGGTGGTGGTAGT 659
& 43	660 IGARGAARCIAGTGGAGGRACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 719
රු අ	720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 779
දු දු	780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839 1680 TTCTGACCAGTGGAAGGTCTGCACCTTTCTGCAGAACTTCTGGTGTGGCTACAGCT 1739
oy oy	840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 899
oy ob	900 ATCAAGTCTTCAAAAACTGGCGGTTTTAAAAGCGGATCTAGAAAAGAAAAAAGGAATCCAT 959
λo	960 GGGCAAACTGTATTCACTCAAACAAGATCTTTCAACACTGAAG 1005

```
1496
                                                                                                                                                                                                                                            2099
                                                                                                                                                                                                                                                                                     1196
                                                                                                                                                                                                                                                                                                                          2159
                                                                                                                                                                                                                                                                                                                                                                   1256
                                                                                                                                                                                                                                                                                                                                                                                                          2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2220 AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 2279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACTITGGGCAITCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAG 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG 1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2340 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG 2399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG 2519
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2400 GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCGG
  1860 GAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGCCTTTGGAAGGACTAGAGAA
                                                                                                                                                            1980 TCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTGCGG
                                                                                                                                                                                                                                          2040 TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                 GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                        2160 GGGGGATCTCCTCATTGACTCTCCCAAGATCACGTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                     GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGGT
                                                                                -----AAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                          2100 GGATGAGCTGGACCTCAAGCTGCGACTGAGGTGATCAAGGGATCCTGGCAGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 2564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                                     1044 ----TAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAACTTGAA
                                       1006 AATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAD37259 standard; DNA; 4476 BP
                                                                                                                                                                                                   1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2520
                                                                                                                                                                                                                                                                                   1137
                                                                                                                                                                                                                                                                                                                                                                 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAD37259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
a
                                    ⋩
                                                                         ત્વ
                                                                                                                ጽ
                                                                                                                                                         ď
                                                                                                                                                                                                ⋧
                                                                                                                                                                                                                                   વ
                                                                                                                                                                                                                                                                                 ⋩
                                                                                                                                                                                                                                                                                                                     ન્
                                                                                                                                                                                                                                                                                                                                                               \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                                      Я
                                                                                                                                                                                                                                                                                                                                                                                                                                               \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             አ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ત્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ન્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
```

```
AB37259
UD AAD37259 standard; DNA; 4476 BP.

X AAD37259;
X AAD37259;
X AAD37259;
X AAD37259;
X Adeno-associated virus vector plasmid, AAV-MCK-3510.
X Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; W Human; dystrophy; da.

X Homo sapiens.
X Homo sapiens.
X Homo sapiens.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
X Chimeric.
```

```
1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2255
                                                                                                                                                                                                                               The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                       New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCCTACACAGAGTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTTCACACCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rccrrcacaccarrrogaagcrccrgaagacaagrcarrrogcagrrcarrgargaagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGTAAACCTGGACCGTTATCAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccastricaracticargadestacardargariridacascccarcassescestres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u> AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4476 BP; 1252 A; 1096 C; 1127 G; 1001 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 4476;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 0;
0; Mismatches 190; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.
                                                                                                                                                                                                  Example 1; Page 63-65; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 84.7%;
Matches 1411; Conservative
                                                                      WPI; 2002-049342/06
(XIAO/) XIAO X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                     Xiao X;
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
```

```
1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3215
                            2315
                                                                                                                       2375
                                                                                                                                                                                                                         2435
                                                                                                                                                                                                                                                                                                                      2495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2795
                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGGGACTTTCCAGCAGTTCAGAA 2555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCAAACTGTA------TTCACTCAAACAAGATCTTCTTTCAACAAGG 1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 3035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACTITIGGGCATICAGCICTCACCGIAIAACCICAGCACICIGGAAGACCIGAACACCAG 1376
                                                                                                                                                                        779
                                                                                                                                                                                                                                                                        839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     959
                                                                             719
                                                                                                                                                                                                                                                                                                                                                                     899
                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTITIGGACATICAGCICTCACCGTATAACCTCAGCACTCTGGAAGACCTGAGCACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AredaAdetriciócAderedecerceAceAceAceAcideCAGCAGCAGCAGAGCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                          720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                        780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGGAAAAAGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2556 GCAGAACGAIGTÁCATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2616 GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2676 ACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGGCCCCAGAATGTCACTCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2736 TCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ------AAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2796 TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2856 egangagerregacercaagerececeaagergagereargagercaagegarecregeageer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCGATCTCCTCATTGACTCTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2916 GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3156 GGACTITIGGICCAGCATCTCAGCACTITICTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG
                                                                                                                                                                                                                                                                                                                      Trendaceaeredaaaecereneererererereaeaaaerregereregeraeaer
                                                                                                                                                                                                                                                                                                                                                                     840 AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAAGATCAAAATGTŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
ggaccarccaaaargacagacrcraccagrcrrragcrgaccr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----TAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAACTTGAA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3276
                                                                                                                                                                                                                       2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1087
                               2256
                                                                                                                         2316
                                                                                                                                                                                                                                                                                                                         2436
                                                                                                                                                                                                                                                                                                                                                                                                                      2496
                                                                             099
```

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specitin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta4173 containing nucleotides 1-1992 (N-terminus, hinge H1 and rods R1, R2 and R3), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New dystrophin minigene for treating Duchenne or Becker muscular
dystrophy comprises an N-terminal domain or modified N-terminal domain,
rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                  spectrin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              recircacadearringaaderecigaadacaagicarringgeagricarrigargagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tecteaceacacattecaaecacaaesaaasatrtctaateatetesaaetesaaaba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1020 reaacraaaccresaccerrarcaaacascrrrasaasaasaarrarcersecrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGAGGACACATTGCAAGGACAGAGAGATTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                  Human; dystrophin minigene; muscular; gene therapy; utrophin; spect
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 4182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4182 BP; 1309 A; 927 C; 970 G; 976 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; DB 6;
6.1e-305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 6.1e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1102;
Pred. No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1; Page 43-44; 71pp; English
                                                                                                                                  Human dystrophin minigene delta4173.
                       AAD37230 standard; DNA; 4182 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 96.9%;
Matches 1134; Conservative
                                                                                                                                                                                                                                                                                                                                                          27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                              28-APR-2000; 2000US-0200777P
                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                   (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                   WO200183695-A2
                                                                                               21-AUG-2002
                                                                                                                                                                                                                                                                                                                      08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                           AAD37230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xiao X;
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
```

180

1019

959 120

9

ı,

1139

ESULT

Ď ≿

```
SON COURT OF THE PROPERTY SERVED AND AN ARCHIVE THE SERVED AND AN ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND ARCHIVE THE SERVED AND AR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         심
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                             1319
                                                                                                                                                                                                                                                                                                                                                                                           1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1920 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA 1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTTGAAAAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCCACGGA 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1980 ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rearcaarciagradagarcaccaacrecrecriregaagaacaacriaaggrafigge 1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1740 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAATGAATTGTT 1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  959
                                                                                                                                                                 420
                                                                                                                                                                                                                                                         479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          899
1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                            TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                      1320 TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCCAAGTACAACAAAAAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cerrereaaregeaacererracreaagaacaerecerrrragrecaregerrreaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                  540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1140 TGAGCTGGACCTCAAGCTGCGCCAAGCTGA 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2040 AAAGTTTCTTGCCTGGCTTACAGAAGCTGA 2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                          g
                                                                                                              셤
                                                                                                                                                               à
                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                         ò
```

Adeno-associated virus vector plasmid, AAV-MCK-delta4173.

(first entry)

21-AUG-2002

BP

AAD37255 standard; DNA; 5149

AAD37255

```
1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene or perably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1657 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 rectreaeageattresaagerecteaagaeaagteattregeagteatteattgatggagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1717 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rgaagtaaaccrgcacccrtarcaacaccrtracaagaagtartaarccrcgccrtcrtrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1897 ccastricaracicardassesiracardaresarriracassesccarcassescossirss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGITITCATACICATGAGGGGTACATGATGGATTTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5149 BP; 1489 A; 1236 C; 1269 G; 1155 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 5149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
68.8%; Score 1102; DB 6;
Best Local Similarity 96.9%; Pred. No. 6.8e-305;
Matches 1134; Conservative 0; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 1; Page 57-59; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-049342/06
                                                                                                                                                                                                                                                                WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (XIAO/) XIAO
                                                                                                                                   Homo sapiens
Unidentified
                                                                                                                                                                                                                                                                                                                                  08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1957
                                                                                                                                                                                                 Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
```

this site and resulting fragment is

ب. ای

and fragment :

this site resulting

```
/label= 83_junction_site
/note= "Dystrophin_gene is split at this site and
attached to an intein sequence. The resulting fragment
used to produce plasmid pSD3"
                                                                                                                                                                                                                                                               /label= Sl_junction_site
/note= "bystrophin gene is split at this site and
attached to an intein sequence. The resulting fragment
aed to produce plasmid pSD1"
        /*tag= a
/label= S4_junction_site
/note= "bystrophin gene is split at thi
attached to an intein sequence. The rev
used to produce plasmid pSD4"
2952. .2953
                                                                                                                                                                                 /label= S2_junction_site
/note= nystrophin gene is split at
attached to an intein sequence. The
used to produce plasmid pSD2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 1; Fig 2; 81pp; English.
                                                                                                                                                                                                                                                                                                                                                                                    13-OCT-2000; 2000WO-CA001216
                                                                                                                                                                                                                                       .3301
                                                                                                                                                                                                                                                                                                                                                                                                                                       (UYDA-) UNIV DALHOUSIE.
(UYPI-) UNIV PITTSBURGH
                                                                                                                                                                         *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-367297/38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Xiao X;
                                                                                                                                                                                                                                                                                                                                 WO200129243-A1
                                                                                                                                                                                                                                                                                                                                                                                                             15-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                          26-APR-2001
misc_recomb
                                                                             misc_recomb
                                                                                                                                                           misc_recomb
                                                                                                                                                                                                                                       misc_recomb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Paul XL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        splice.
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2796
               TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACT 2136
                                                                                                                       2376
                                                                                                                                                                                                                                                                                                                                              AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGCTTCTTTTACAAGACAT 2436
                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCAAACTGTATTCACTCAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAAAGACGGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTIGAAAAGAGIACAGCACAGACCCTIGAAAGACTCCAGGAACTICAAGAGGCCACGGA 1139
                                                                                                                                                                                   GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 2256
                                                                                                                                                                                                                                                                                                                                                                                                cerrencaaaroscaaesrerracreaasaaaasasiseerrirrasisearoscaraserracasa 2496
                                                  479
                                                                                                      599
                                                                                                                                                                                                             629
                                                                                                                                                                                                                                                                  719
                                                                                                                                                                                                                                                                                                                    AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT 779
                                                                                                                                                                                                                                                                                                                                                                        839
                                                                                                                                                                                                                                                                                                                                                                                                                           833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 959
                                                                                                                                                                                                                                                                                 TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                    TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                           GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                             CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             therapy;
DMD; BMD; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; dystrophin; extein; intein; trans-splicing; gene
Duchenne muscular dystrophy; Becker muscular dystrophy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGCTGGACCTCAAGCTGCGCCAAGCTGA 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGTTTCTTGCCTGGCTTACAGAAGCTGA 2826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human dystrophin gene (Becker form)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD06794 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-AUG-2001
                       2017
                                                                            2077
                                                                                                                              2137
                                                                                                                                                                                                                                       2257
                                                                                                                                                                                                                                                                                           2317
                                                                                                                                                                                                                                                                                                                                              2377
                                                                                                                                                                                                                                                                                                                                                                                                2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD06794;
                                                  421
                                                                                                      480
                                                                                                                                                           540
                                                                                                                                                                                                             009
                                                                                                                                                                                                                                                                  099
                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960
361
                                                                                                                                                                                    2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESULT 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AD06794
                       Δ
```

```
The invention relates to a method directed to the use of spontaneous or automatic protein trans-splicing to join two or more peptides at junction site. This method involves expressing extein peptides having co-reacting portions of split intein attached to them, so that peptides will splice automatically under suitable conditions. The invention also provides methods for circumwenting virton packaging size limitations in recombinant virus particle, by splitting a coding region for a protein to be delivered into two or more extein genes, which are packaged in separate virus particles and are co-delivered in a target cell for the expression and for subsequent trans-splicing to form the complete protein. In particular, the method is used for trans-splicing human dystrophin and in gene therapies of recombinant adeno-associated virus diseases such as Duchenne muscular dystrophy (DMD) or Becker muscular dystrophy (BMD). The present sequence is human dystrophin gene (Becker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
Use of spontaneous or automatic protein splicing to join two or more peptides at junction site involves expressing extein peptides having reacting portions of split intein attached to them, so that peptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲,
ن
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 5952 BP; 1860 A; 1344 C; 1410 G; 1338 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Length 5952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
68.2%; Score 1092.4; DB 5; Length
Best Local Similarity 99.4%; Pred. No. 4.2e-302;
Matches 1107; Conservative 0; Mismatches 6; Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
```

* * * * * *

ă

≿

원 ≯ 정

 \gtrsim

ਖੋ

≿

⋩

61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAGAGT 120 	RESULT 9 ABK82000 LD ABK82000 standard; DNA; 8689 B
TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC	1
1011 IGANAIAAN-CIGAN-CGITAICAAN-CASCITTAGANGAN-TATTATCGIGGCITCITC 10/0 181 IGCTGAGACA-CATTACAAN-GAAGAGAGATTACTAATGATGTGAGAGAGTGAAAGA 240	DI 13-AUG-ZUUZ (IIRBE enery) XX DE DNA encoding mini-dystrophin pr
TGCTGAGGACATTGCAAGCACACAATTCTAATGATGTGGGAGGGA	XW Mini-dystrophin peptide; spectr KW Duchenne's muscular dystrophy;
241 CCAGTITICAIACTCATGAGGGGTACAIGAGATTTGACAGCCCATCAGGGCCGGGTTGG 300 	XX OS Homo sapiens. OS Synthetic.
301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	AA WO200229056-A2. XX PD 11-APR-2002.
361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 	XX PY 04-OCT-2001; 2001WO-US031126. XX DF 06-OCT-2000; 2000US-0238848P.
421 TAGCATGGAAAAACAAAGGAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479 	XX XX XX PI Chamberlain US, Harper SO;
480 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAGA	
540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA 599 	PT peptide comprising a specific r PT a nucleic acid sequence encodir XX PS Disclosure, Fig 15; 145pp, Engl
600 AGAAGAICTAGAACAAGAACAAGICAAGGICAATICTCICACTCACTAGIGGIGGIGGIAGGIAG 659 	
660 TGATGAATCTAGTGGGAGATCAGGCAACTGCTGTGGAAGAACAACATAAGGTATTGGG 719 	
720 AGATCGANGGGGAAACANCIGTAGANGGACAGAAGACCGCNGGGTNCTTTTACAAGACAT 779 	ior treatment or muscle di (DMD). This sequence repre invention
780 CCTTCTCAAATGGCAACGTCTTACTGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839 	Sequence 8689 BP; 2/21 A; 18 Query Match Best Local Similarity 99.9%;
840 AAAAGAAGGAGGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTF 899 	Matches 1102
900 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 959 	1099
960 GGGCÀAACTGTATTCACTCAACAAGÀTCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019 	1159
1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079 	DD 1219 TGAAGTAAACCTGGACGGTAA Qy 181 TGCTGAGGACACATTGCAAGG
ACTTGAAAAGAGTACAGCACAGACCCTTGAAAGA 1113	Db 1279 İĠCTGAĞGACACATTGCAAĞCP Qy 241 CCAGTTTCATACTCATGAGGGG
1971 ACTTGAAAAGAGTACAGCACAGGAAACTGAAATA 2004	н

გ ≿

≿

 8 2 8 2 8

≿

ŏ

≿

ŏ

≿

```
composition comprising a mini-dystrophin rin-like repeat domain, where the domain respeats, and contains no more than n spectrin-seven number between 4-24, or a nucleic acid peptide. The mini-dystrophin peptide or the is useful as a medicament, for preparing a sation and in the preparation of a composition sease, e.g. buchenne's muscular dystrophy sents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                herapeutic drugs, has a mini-dystrophin
number of spectrin-like repeat domains, or
ing the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCABACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                     trin-like repeat domain; muscle disease; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u> ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 C; 1861 G; 2303 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1091, DB 6; Length 8689;
Pred. No. 1.3e-301;
; Mismatches 0; Indels 1;
                                                                                                                 protein deltaH2-R19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lish.
ЗЪ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
```

```
Example 2; Fig 23; 145pp; English
                                                                                                                                                                                                                                                                                                                                                                                                               , 0
                                           04-OCT-2001, 2001WO-US031126
                                                                 06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                             SO:
                                                                                      (UNMI ) UNIV MICHIGAN
                                                                                                                                     WPI; 2002-435334/46.
WO200229056-A2
                       11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                        1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2178
                                                                             1518
                                                                                                                          1578
                                                                                                                                                                       1638
                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAGTGCTTCA 1698
                                                                                                                                                                                                                                                                                                         TGATGAATCTAGTGGAGAATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                               AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTACAAGACAT 1878
                                                       420
                                                                                                   479
                                                                                                                                                  539
                                                                                                                                                                                              599
                                                                                                                                                                                                                                         629
                                                                                                                                                                                                                                                                                        719
                                                                                                                                                                                                                                                                                                                                    779
                                                                                                                                                                                                                                                                                                                                                                                 839
                                                                                                                                                                                                                                                                                                                                                                                                                              899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGAAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGAAGATGAACTGAACAAGATTCACACAACTGGGCTTTAAAGATCAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                    AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCAACTGTATTCACTCAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                      TAGCATGGAAAAAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                       GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                          TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                    TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATC-GAAACT
                                                        <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; human; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human dystrophin, full length HDMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080 ACTIGAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCAAGTCTTCAAAAACTGGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA; 11241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABK82005
                                  1399
                                                                              1459
                                                                                                                          1519
                                                                                                                                                                       1579
                                                                                                                                                                                                                     1639
                                                                                                                                                                                                                                                                   1699
                                                                                                                                                                                                                                                                                                               1759
                                                                                                                                                                                                                                                                                                                                                             1819
                                                                                                                                                                                                                                                                                                                                                                                                         1879
                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2179
                                                        361
                                                                                                                                                                                              540
                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                         099
                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                   780
                                                                                                   421
                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABK82005
             301
```

```
The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeat domain, where the domain like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchanne's muscular dystrophy (DMD). This sequence represents a human dystrophin polynucleotide sequence used in the creation of the mini-dystrophin peptides of the
composition for preparing therapeutic drugs, has a mini-dystrophin sptide comprising a specific number of spectrin-like repeat domains, nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1219 igaagiaaacciggaccerrarcaaacacriragaagaagrarrarcergecricrirc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1279 IGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGTITICATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 11241 BP; 3738 A; 2325 C; 2656 G; 2522 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 11241;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1091; DB 6;
Pred. No. 1.5e-301;
0; Mismatches 0;
```

120

1338

240

1278

180

1398

300

1518

1578

479

1458

ö

```
The invention describes a composition comprising a mini-dystrophin peptide comprises a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a muclaic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polymucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rgargaarcracregagarcacecaacrecrecrirregaagaacaacrraaegrarrege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agarcgargggcaaacarcrgragargaagagagagagggcggcrgggrrcrrragaagacar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ccagirircaractorigaegegracarearearitroacaecccarcaegeccegringe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u> TGCTGAGGACACATTGCAAGCACACAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1579 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGAGGACACATTGCAAGCACAAGGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGITICATACICATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                 Sequence 11443 BP; 3707 A; 2339 C; 2502 G; 2895 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                     Length 11443;
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                               .
0
                                                                                                                                                                                                                                                                                                                                                     Score 1091; DB 6;
Pred. No. 1.5e-301;
0; Mismatches 0;
                                                            Disclosure; Fig 17; 145pp; English
                                                                                                                                                                                                                                                                                                                                                     cuery Match 68.1%;
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1819
                                                                                                                                                                                                                                                                                                                                                                                                                                       -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1759
                                                                                                                                                                                                                                                                              invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 심
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                               1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2178
                                                            1698
                                                                                                                                      1758
                                                                                                                                                                                                                                                                                                                                                                            1938
                                                                                                                                                                             719
                                                                                                                                                                                                                                                                                                                                      839
                                                                                                                                                                                                                                                                                                                                                                                                                    899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               959
                                                                                                    629
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1939 AAAAGAAGATGCAGTGAACAATTTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2059 GGGCAAACTGTATTCACTCAAACAAGATCTTTCAACAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                          1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                   rdarcaarcragagarcacgcaacrgcrcrrrrggaagaacaacrraaggrarrggg
                                                                                                                                                                                                                                                                                               .819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                              1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA
                         GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                             TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                           AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                      CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                    <u>AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT</u>
                                                                                                    AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   muscle disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A composition for preparing therapeutic drugs, has a mini-dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mini-dystrophin peptide; spectrin-like repeat domain;
Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mini-dystrophin protein deltaR9-R16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTGAAAAGAGTACAGCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Actrohadadadracadcada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABK82002 standard; DNA; 11443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŝö;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-435334/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W0200229056-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chamberlain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1080
                                                                                                  600
                                                                                                                                                                             099
                                                                                                                                                                                                                   1759
                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABK82002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABK82002
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                         ጵ
                                                    9
                                                                                                à
                                                                                                                                      පි
                                                                                                                                                                           \stackrel{>}{\sim}
                                                                                                                                                                                                                                                         ል
                                                                                                                                                                                                                                                                                                                                      ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

1158

9

Gaps

Ä

1218

120

1278

180

1338

240

1398

360

300

1458

1518

420

1578

539

479

1638

599

1758

629

1818

719

Ä

```
1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1698
                                                                                                      1158
                                                                                                                                                                                                                                                1278
                                                                                                                                                                                                                                                                                                                      1338
                                                                                                                                                                                                                                                                                                                                                                                          1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1579 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAGAACAAGGAAAATGGAGGAAGA 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1938
                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                          120
                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  959
                                                                    60
                                                                                                                                                                                                                                   1339 ccagrircaracicargagggracargarggarirgacagcccarcagggccgggrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2059 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                  1099 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                            1159 recriteacadearriggaagerecreaagacaacrearringeagererreargaaga
                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGGACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                               1279 TGCTGAGGACACATTGCAAGCACAAGGAGAATTTCTAATGATGAGGAGGAGTAGAAGA
                                                                                                                                                                                                                                                                                                                                                          CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1639 GCCTCTTGGACCTGATCTTGAGGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1759 igaigaarciagiggaagarcacgcaacigcigcrifiggaagaacaacriaaggrafigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999 ATCAAGTCTTCAAAAACTGGCCGTTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                      1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                            TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600 AGAAGATCTAGAACAAGAAGAAGTCAGGGTCAATTCTCTCACACCTCACATGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720 AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACGCCGCIGGGIICTITIACAAGACAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                    Gaps
                                    1,
 Length 12923
                                  Indels
Score 1091; DB 1;
Pred. No. 1.6e-301;
0; Mismatches 0;
68.1%;
99.9%;
Query Match
Best Local Similarity 99.9
Matches 1102; Conservative
                                                                                                                                          61
                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                121
                                                                                                셤
                                                                                                                                            ઠે
                                                                                                                                                                    엄
                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                               Бb
                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        95 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 8
                                  1938
                                                                                                        1998
                                                                                                                                                                            2058
                                                                                                                                                                                                                  1019
                                                                                                                                                                                                                                                                                      CCAGAAGAAGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                  CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGATAATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                      899
                                                                                                                                            959
                    CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                     GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACACTGAAGAATAAGTCAGTGAC
                                                                        AAAAGAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAAGATCAAAATGTT
                                                                                                AAAAGAAGATGCAGTGAACAAGATTCACACAAACTTTTAAAGATCAAAATGTT
                                                                                                                                            ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dystrophin; muscular dystrophy; probe; antibody; diagnosis; prenatal; heterozygote; gene therapy; genetic screening; foetal screening; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The inventors claim an MD probe comprising a purified se NA SQ which hybridises to at least a part of the MD gene; pure dystrophin (DS) polypeptide, purified NA encoding US and antibodies (Ab) to DS. The probes are equal to or greater than 10b of one of 12 cDNA sequences deposited as ATCC 58666-57677. The MD gene is human, or a murine Dmd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dystrophic of muscular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 12923 BP; 4296 A; 2613 C; 2963 G; 3044 T; 0 U; 7 Other,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 probes,
therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Muscular dystrophy gene - used for prepn. of polypeptide and antibodies for diagnosis and dystrophy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hoffman EP, Koenig M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence of human muscular dystrophy (MD)
                                                                                                                                                                                                                                                                                                                                                          1080 ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                          ACTTGAAAAGAGTACAGCACAGA 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
209. 12923
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure, Fig 5, 68pp, English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA; 12923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   87US-00136618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88WO-US004504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (CHIL-) CHILDRENS MED CENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kunkel LM, Monaco A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1989-220587/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAN90338 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; AAP90373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-DEC-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-DEC-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO8906286-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-JUL-1989
                                                                    840 7
                                                                                                                                                                                                                                                                                  1020
                                    1879
                                                                                                        1939
                                                                                                                                                                            1999
                                                                                                                                                                                                                                                2059
                                                                                                                                                                                                                                                                                                                      2119
                                                                                                                                                                                                                                                                                                                                                                                          2179
                                                                                                                                          900
                                                                                                                                                                                                                960
 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAN90338
```

g ò

ò

```
1518
                                                                                                                                                                                                                                                                                                                                                                                           1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998
                                                                                                                                                                                                                                                                                                                                                   479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                  TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGAGAAGTGGTGAAAGA
                                                                                                    CCAGITICALACICATGAGGGGGTACATGATGGATTITGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                       ccagiticatacicatgaggggracatgarggatingacagcccarcagggccgggtrgg
                                                                                                                                                                                                                           1399 TAATATTOTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                            AACTGAAGTACAAGAGCAGATGATGATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                   421 TAGCATGGAAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                    1519 TAGCATGGAAAAAAAAAGCAATTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rearcaarcragicadarcaccaacrecrecririgaaacaacarcraagearrigee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cerrereaarescaaesrerracreaasaaesaeseerrrrrasreeareserreaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APANGANGANGCAGTGAACAAGANTCACACAACTGGGCTTTAAAGATCAAAATGAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u> ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                   TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2119 CCAGAAGAACGAAAGCAIGGCIGGATAACTITGCCCGGIGIIGGGAIAAITIAGICCAAAA
                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                    gegcaaactgtattcactcaaacaagatcttctttcaacactgaagaataagtcagtgac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTGAAAAGAGTACAGCACAGA 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-DEC-2002 (first entry)
                                                           1279
                                                                                                                                            1339
                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                          1459
                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2179
                                                                                                    241
                     181
                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABT10904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABT10904;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
ABT10904
ID ABT10
XX
AC ABT1C
XX
DT 04-DE
                                                                                                                                       g
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                ò
                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                          CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polymuclectide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a human dystrophin polymucleotide sequence used in the creation of the mini-dystrophin peptides of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, or a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCTATGCCTACACACACACACTATATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACAGGGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recircaeagearcaecrecreaagacaeagaeagaeagreagaeagareagaeaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; human; gene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 13957 BP; 4602 A; 2781 C; 3122 G; 3452 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1091; DB 6; Length 13957;
Pred. No. 1.7e-301;
0; Mismatches 0; Indels 1;
CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGT
                                                                                   1102
                                                                                                         ACTTGAAAAGAGTACAGCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 2; Fig 1; 145pp; English
                                                                                                                                                                                                                                                                                                                                                   encoding human dystrophin.
                                                                                                                                                                                                                             DNA; 13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Harper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-435334/46.
                                                                                                                                                                                                                             ABK81959 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chamberlain JS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                                                                                                          13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-APR-2002
                                       2119
                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1099
                                                                                                                                                                                                                                                                  ABK81959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ношо
                                                                                                                                                                               RESULT 13
ABK61959
                                                                                                                                                                                                                                                                                                                                                 CDNA
```

g

ઠે

g

ò

ð

1578

539

1698

599

1758

719

1818

779

1878

1938

899

1998

959

```
CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene, liver cancer, ds, hepatocellular carcinoma, hepatotropic, metastatic liver tumour, cytostatic, expression profile, disease state, disease progression, drug toxicity, drug efficacy, drug metabolism.
1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                          TAGCATGGAAAAACAAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT
                                                                                                                                                                                                                                                           1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1879 ccrrcrchaniedchacercrracienadaacherecerrrragicerregerrache
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2059 GGGCAAACTGTATTCACTCAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                       1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                  TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                          GCCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACAACAACAAGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                          TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTIGAAAAGAGTACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Actricadadagracaccacaca 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gene #2284 used to diagnose liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA; 13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABN95786 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200229103-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1939
                                               361
                                                                                                                                  421
                                                                                                                                                                               1519
                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABN95786;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AESULT 15
ABN95786
XX
AC ABN95
XY
YY 13-AU
XX
CHO Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
KW Gene
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                    8 8 8
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                               d
D
                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
  8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to methods of diagnosing breast cancer in a patient, which comprise detecting the level of expression in a tissue sample of two or more genes selected from those shown in ABTO9867—
ABT1112, where a differential expression of the genes indicates breast cancer. The methods are useful in diagnosing, treating, detecting the progression, and in monitoring treatment of breast cancer in patients.

The methods are also useful as a screening tool for agents that modulate the onset or progression of breast cancer. The breast cancer genes may be used as diagnostic markers for the prediction or identification of the malignant state of breast tissue, for confirming the type and progression of cancer, and for drug screening and assays. The present sequence is a coding sequence of the invention. Note: The sequence data for this patent electronic format directly from WIPO at the was obtained in electronic format directly from WIPO at the was obtained in the wip of the printed specification, but was obtained in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1099 GAGCTATGCCTACACACACACACGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recrireacadearringaaagerecreaagacaagrearringgeagringargargagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rgaagraaaccrggaccgrrarcaaacagcrrragaagaagrarrarcgrggcrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGTITCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGCCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccadirircanacitaridaddddarandanddaringacadcccancadddcccddridd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Diagnosing breast cancer in a patient comprises detecting the level of gene expression in cell or tissue samples, where a differential gene
                                             Human; breast specific gene; breast cancer; differential expression;
cytostatic; gene therapy; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 13957 BP; 4602 A; 2781 C; 3122 G; 3452 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 68.1%; Score 1091; DB 6; Length 13957; Best Local.Similarity 99.9%; Pred. No. 1.7e-301; Matches 1102; Conservative 0; Mismatches 0; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID NO 1038; 260pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene expression in cell or tissue samples, expression is indicative of breast cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                             3
                                                                                                                                                                                                                                                                                                                                                                                                                                  Zeng
associated coding
                                                                                                                                                                                                                                                                                                                                                                                                                             Nation M, Diggans JC,
                                                                                                                                                                                                                                                                                          25-JAN-2001; 2001US-0263757P.
25-APR-2001; 2001US-0286090P.
23-MAY-2001; 2001US-0292517P.
                                                                                                                                                                                                                                                25-JAN-2002; 2002WO-US002176
                                                                                                                                                                                                                                                                                                                                                                                  (GENE-) GENE LOGIC INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-674803/72
                                                                                                                                                          WO200259271-A2
                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
    Нишап
```

02-OCT-2001, 2001WO-US030589. 02-OCT-2000, 2000US-0237054P.

11-APR-2002

```
ઠે
                                                                g
                                                                                                                                                                          셤
                                                                                                                                                                                                                  ठ
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                  8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                              The invention relates to a novel method for diagnosing and detecting the progression of liver cancer, hepatocallular carcinoma or metastatic liver tumour in a patient, and differentiating metastatic liver cancer from hepatocallular carcinoma in a patient, involving detecting the level of expression of two or more genes represented in ABN9503-ABN9485 in a tissue sample. The method of the invention has hepatocropic, and cytostatic activity. The method is useful for diagnosing and detecting the progression of liver cancer, hepatocallular carcinoma and metastatic liver carcinoma in a patient. The method is useful for identifying expression profiles which serve as useful diagnostic markers as well as markers that can be used to monitor disease states, disease progression, and to this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09
                                                                                                                                                 Diagnosing and detecting the progression of liver cancer, hepatocellular carcinoma or metastatic liver tumor in a patient, involves detecting the level of expression of two or more genes in a liver tissue sample.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1279 TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1339 CCAGTTTCATACTCATGAGGGGTACATGATGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GAGCTATGCCTACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1099 GAGCTATGCCTACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGAGGACACATTGCAAGCACACGAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 13957 BP; 4602 A; 2781 C; 3122 G; 3452 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 68.1%; Score 1091; DB 6; Length 1 Best Local Similarity 99.9%; Pred. No. 1.7e-301; Matches 1102; Conservative 0; Mismatches 0; Indels
                                                Vockley JG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ftp.wipo.int/pub/published_pct_sequences
                                                Peres-Da-Silva S,
                                                                                                                                                                                                                                                     Claim 1; SEQ ID NO 2284; 298pp; English
GENE LOGIC INC
                                                Alvares C,
                                                                                                   WPI; 2002-426119/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        አ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ል
```

```
1019
                                                                                                                                                                                                                                                                                                                     1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2178
                                                                                                                                                                1758
                                                                                                                                                                                                                                              1818
                                                                                                                                                                                                                                                                                                                                                                                              1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                959
                                                                                                                                                                                                                                                                                779
                                                                                                                                                                                                                                                                                                                                                           839
                                                                                                                                                                                                                                                                                                                                                                                                                                     899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT
GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAAGAAGAAGAAGAAGAAGA
                                                                                 TGATGAATCTAGTGGAATCACGCAACTGCTTTGGAAGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                       <u> agarcgargescaaacarcreragargeacagaagaccecrescrrerrrracaagacar</u>
                                                                                                                                                                                                                                                                                                                                                                                                cerrereaareseaacererracreaasaacagrecerrrrragrecareserrreasa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                    GCCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                             TCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                       <u> AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT</u>
                                                                                                                              CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080 ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4, 2004, 18:20:56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Actricadadadadracacacada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: April Job time: 418.121 secs
                                                                                                                                                                                                                                                                                                                                                                                                  1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2179
                                                      540
                                                                                                                                600
                                                                                                                                                                    1699
                                                                                                                                                                                                           099
                                                                                                                                                                                                                                              1759
                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                         1819
                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1020
                                                                                 a
                                                  ઠે
```

un Σ̈

```
April 4, 2004, 12:04:07; Search time 4173.93 Seconds (without alignments) 16625.161 Million cell updates/sec
                                                                                                                                     US-09-845-416-14_COPY_900_2500
1601
1 gagctatgcctacacacagg......taccagtctttagctgacct 1601
                                                                                                                                                                                                                                                                      6940544
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                        3470272 segs, 21671516995 residues
                                                                                                                                                                                                                                                                     otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                         ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                      nucleic search, using sw model
                                                                                                                                                                                                           Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   other: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_ro:*
em_sts:*
em_un:*
em_vi:*
em_htg_hum:*
em_htg_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rtgo_hum:*
                                                                                                                                                                                                                                                                                                  inimum DB seq length: 0 aximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_htg_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         htg mam:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rod:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_ba:*
em_fun:*
em_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jb pr: *
gb ro: *
gb sts: *
gb sy: *
gb un: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_in:*
em_mu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          # * * *.
6 0 0
0 0 0
                                                                                                                                                                                                IDENTITY NUC
                                                                                                                                                                                                                                                                                                                                                                                                                  gb_ba:*
gb_htg:*
                                                                                                                                                                                                                                                                                                                                                                                                    GenEmbl:*
                                                                                                                                                                                               coring table:
                                                                                                                                          itle:
erfect score:
                                                      nucleic
                                                                                                                                                                                                                                                                                                                                                                                                      atabase :
                                                                                                                                                                       equence:
                                                                                                                                                                                                                                           earched:
                                                                                   ö
```

Pred. No. is the number of results predicted by chance to have a

AX306153 Mouse dystrax306153 Sequence
AX53882 Sequence
AR03332 Sequence
AX145592 Sequence
AX538620 Sequence
AX538620 Sequence
AX538621 Sequence
AX538621 Sequence
AX538621 Sequence
AX538621 Sequence
AX538621 Sequence
AX538621 Sequence
B3021 Shortened d
X06179 Human adult
BC009242 Homo appi AX53858 Sections of AX53858 Sequence X69086 H saties m AJ002967 Rattus no BC022140 Mus muscu BC062163 Mus muscu BC050183 Mus muscu AG3605 Sequence 7 AR281529 Sequence 9 AR28588 Sequence AX538588 Sequence AX538584 Sequence PAT 23-NOV-2002 AX14289 Sequence AX114289 Sequence AX538622 Sequence AX538624 Sequence AX538627 Sequence AX536281 Sequence AX538581 Sequence AX538581 Sequence AR220819 Sequence X14298 Human mRNA E30220 Shortrened d AF070485 Canis fam E30219 Shortened d Y12229 M.musculus AX538613 Sequence AX538590 Sequence AX538589 Sequence AX538619 Sequence score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution. Chamberlain, J.S. and Harper, S.Q. Mini-dystrophin nucleic acid and peptide sequences Patent: WO 022955-A 39 11-APR-2002; THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US) linear DNA ALIGNMENTS AX538619 5417 bp Sequence 39 from Patent W00229056. AX538619 SUMMARIES BC062163 BC050183 HUMDYS AR220819 HSDMDR HSDMDF1 HSDMDA1 BC009242 E30218 E30220 AF070485 AX538620 AX538621 E30221 GGDYS AX409637 AX538581 AX538583 AR142592 MUSDYS E30219 AX538619.1 GI:25271163 synthetic construct synthetic construct artificial sequences. B 12446 4402 13887 4402 5462 4075 13575 630 1966 1481 10302 10705 1898 Length 11443 12057 13957 13957 19307 19307 327 6059 11096 11096 13815 % Query Match 1091 1087.8 932 916.6 869.2 3327.0 3333337.0 3333337.0 3337.0 3326.2 3326.2 3326.2 3326.2 854.2 Score RESULT 1
AX538619
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM REFERENCE AUTHORS TITLE JOURNAL Result

		REFERENCE 1 (bases 1 to 5952) AUTHORS Xiao,X. and Liu,P.X. TITLE Method and vector for producing and transferring trans-spliced
EATURES Location/Qualifiers source 1. 5417 /organism="synthetic construct" /mol type="unassigned DNA" /db_xref="taxon:32630" /noTe="synthetic"	Duery Match 1099 GAGCTHIGGCTRCACACAGGCTGCTTRACCACCTCTGCACCTCTCACCGGGCCCCTTT 1099 GAGCTRTGCCTCACACAGGCTGCTTRACCACCTCTGCCTCTACCCGGGCCCCTTT 1099 GAGCTRTGCCTCACACAGGCTGCTTRACACACCTCTGCCTCTACCCTCACCGGGCCCCTTT 1159 GCTTCTCACACTTTGCACCTCTTACACACACTTTACACACAC	b 1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGAATGCAAATGTATT 1998 y 900 atcaagtcttcaaaactggccgttttaaaagcggatctagaaaagaaaaagcaatccat 959

	MAILLAGES MAILLAGE MA
Deptides Deptides Deptides Location/Qualifiers Location/	6. TCCTTCACACACTATIONAL CONTROLLING CONTRO

/note="Synthetic"	Query Match 68.1%; Score 1091; DB 6; Length 8689; Best Local Similarity 99.9%; Pred. No. 6.8e-257; Matches 1102; Conservative 0; Mismatches 0; Indels 1; Gaps 1;	Qy 1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCCTGACCCTACACGGAGCCCATT 60	OY 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120 Db 1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAAGAGAG 1218	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAAGAA	TGCTGAGGACACATTGCAAGCACAAGAGAGATTTCTAATGATGTGGAAGTGGTGAAGA 2 	Qy 241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300	Qy 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAAAAATTATCAGAAGATGAAGA 360 	OY 361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 1459 AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518	Qy 421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479 1519 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 1578	OY 480 GAAAGAGTIGAATGACTGCTAACAAAAACAGAAGAACAAGAACAAGGAAATGGAGGAAGA 539	QY 540 GCCTCTTGGACCTGATCTTGAAGACCTAAAAGCGCCAAGTACAACAACATAAGGTGCTTCA 599	QY 600 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	Qy 660 TGATGAATCTAGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 719 Db 1759 TGATGAATCTAGGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1818	Qy 720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 779	Qy 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839	CY 840 AAAAGAAGATGCAGTGAACAAGATTCACACAAGTGGCTTTAAAGATCAAATGAAATGTT 899	Qy 900 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGGAATCCAT 959 1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT 2058	Qy 960 GGGCAAACTGTATTCACTCAAAGAGTCTTTCAACAACAAGAATAAGTCAGTGAC 1019
	. =			<u>-</u>								<u></u>					-	
361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 	-GAAACT	GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAACAAGAAAATGAGGAAGA 	GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA	AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACCTCACATGGTGGTAGT 	660 IGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 719 	720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT 779	. 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839	AATGTT		GGGCAAACTGTATTCACTCAACCACATCTTCTTTCAACACTGAACAATAAGTCAGTGAC 101 	CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 107	ACTIGNAAAGAGIACACACACACACACTIGAAAA 1113		2 from Pate	synthetic c		JOURNAL FATERI: WO UZZUSS-A 42 11-APR-2002; FRATURES LOCATION/QUALIFIERS SOURCE 18689	/organism="synthetic construct" /mol_type="unassigned DNA" /db_xref="taxon:32630"

Ω	2059 GGGCAAACTGTATTCACTCAAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2118		
Ω <	1020 CCAGAAGACGAAGCAIGGGIGGAIAACTITGCCCGGIGITGGGATÀAITITAGICCAAAA 1079 	Db 1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAGGTGCTTCA	16
· > 1	ACTIGAAAAGAGIACAGCACAGA 1102	OY 600 AGAAGATCTAGAACAAGAACAAGTCAGGGCAATTCTCTCACTCA	CTCACTCACATGGTGGTAGT 659
ESULT	יין אינוומאיאימימינואראימימימיא מצמז	Qy 660 TGATGAATCTAGTGGAGATCACCCAACTGCTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 11559 TGATGAATCTAGTGGAGATCCACGCAACTGCTGCTTGGAAGAACAACTTAAGGTATTGGG	GAAGAACAACTTAAGGTATTGGG 719
X538624 OCUS EFINITION CCESSION ERSION	i AX538624 11443 bp DNA linear PAT 23-NOV-2002 ION Sequence 44 from Patent WO0229056. ON AX538624 1 GT:25271175	QY 720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT DD 1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT	CGCTGGGTTCTTTACAAGACAT 779
EYWORDS SURCE ORGANISM	synthetic co	Oy 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAGGGCCTTTTTAGTGCATGGCTTTCAGA	CTTTTTAGTGCATGGCTTTCAGA 839
EFERENCE AUTHORS TITLE		OY 840 AAAAGAAGATGCAGTGAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT Db 1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT Db 1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT	TTTAAAGATCAAATGAAATGTT 899 TTAAAGATCAAAATGAAATGTT 1998
EATURES SOUT	THE REGEN TOP	Qy 900 ATGAAGTCTTCAAAAACTGGCCGTTTTTAAAGGGGATCTAGAAAAGGAAAAGCAATCCAT Db 1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAAGAAAAGCAATCCAT	CTAGAAAAGAAAAGCAATCCAT 959
	/organism="synthetic construct" /wol_type="unassigned DNA" /db_xref="taxon:32630" /noTe="Synthetic"	OY 960 GGGCAAACTGTAITCACTCAAACAAGAICTTTCTACACACTGAAGAATAAGTCAGTGAC 	CTTTCAACACTGAAGAATAAGTCAGTGAC 1019
RIGIN Query Best	; Length 11443;	Oy 1020 CCAGAAGACGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAA	TGTTGGGATAATTTAGTCCAAAA 1079 TGTTGGGATAATTTAGTCCAAAA 2178
Matche Y	ative 0	Oy 1080 ACTTGAAAAGAGTACAGCACAGA 1102	
q	1099 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCCTCTGACCCTACACGGAGCCCATT 1158		
> Q	61 TCCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTTCATTGAGAGAG 120 	AX538627	linear PAT 23-NOV-2002
م د	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAATATTATCGTGGCTTCTTTC 180 	11.DN Sequence 4/ Irom Fatent W022305 ION AX538627.1 GI:25271181 DS .	
۵ م	181 IGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240 		
۵. خ		AUTHORS Chamberlain, J.S. and Harper, S.Q. TITLE Mini-dystrophin nucleic acid and peptide JOURNAL Patent: WO 0229056-A 47 11-APR-2002; THE REGENTS OF THE UNIVERSITY OF MICHIGAN	e sequences . AN (US)
> Q	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	FEATURES Location/Qualifiers 112057 /organism="synthetic construct"/mol_type="unassigned_DNA"	£
م ح	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 	o_xrer="tax ote="Synthe	,
2. ہ	421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATC-GAAACT 479 	Query Match 68.1%; Score 1091; DB 6; Best Local Similarity 99.9%; Pred. No. 6.9e-257 Matches 1102; Conservative 0; Mismatches 0	; Length 12057; 7; Indels 1; Gaps 1;
ı > 0	480 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 	QY 1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCTACACGGAGCCCATT	TCTGACCCTACACGGAGCCCATT 60

≿

≱ ₽

<u>></u>

ହ ≿

≿ ĕ

ÿ ĕ

≿

RESULT 7 AX409637 LOCUS DEPINITION Sequence 2284 from Patent W00229103. AX409637	Query Match 68.1%; Score 1091; DB 6; Length 13957; Best Local Similarity 99.9%; Pred. No. 6.9e-257; Matches 1102, Conservative 0; Mismatches 0; Indels 1; Gaps 1; Qy 1 GAGCTAGCAGAGGCTGCTATGTGACCGCTGAGCCCATT 60	Db 1099 GAGCTATACTACAGGCCCTTATGTCCACCACTCTGACCCTACACGGGGCCCATT 1158 Qy 61 TCCTTCACAGGCATTGGAAGCTCGAAGACAGTCATTGGCAGTTCATTGATGGAGG 120 Db 1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGG 120	Oy 121 TGAAGIAAACCTCGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGGGGCTTCTTTC 180 Db 1219 TGAAGIAAACCTGGACCGTTATCAAACAGCTTTAGAAGAATTATCGGGGTTTTTCTTTTCGAAGATTTCTTTTTTTT	1279 TGCTGAGGACACATTGCAAGGAGAGATTTCTAATGATGTGGAAGTGAAGAGA 241 CCAGTTTCATGAAGGGGTACATGATGATTGATGATGATGGGAAGTGGAAGA 241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCTGGGTTTGATGATGATGATGATGATGATGATGATGATGAT	OY 301 TAATATTCTACAALTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 1399	Db 1459 AACTGAAGTACAGATGAATCTCCTAAATTCAAGAATGCGAATGCCTCAGGGTAGC 1518 Qy 421 TAGCATGGAAAACAAACTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479 Db 1519 TAGCATGGAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1578	480 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAGAAAG	Db 1639 GCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698 Qy 600 AGAAGATCTAGAACAAGAACAAGGTCAAGGTCAATTCTCTCACTCA
61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGA 120 1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAGTCATTTGGCAGTTCATTGATGAGAGAG 1218 121 TGAAGTAAACCTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAGGAGGAGTTTTC 180 1219 TGAAGTAAACCTGGAACGTTATCAAACAGGATTTCTAATGATGTGGAAGTTTTCTTTC	421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC 479	1579 GAAAGATTGAATTGCTTAATAAAAACGAAGAAGAAAAATGGAAATTGAAGAAAAAAAA	600 AGAAGATCTAGAACAAGAAGTCAGGGTCAATTCTCTCACCACATGGTGGTAGT 659	10 AGAICGAIGGGAGATCACGCAACIGCIGCIIIIIIIIIII	780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839 1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1938 840 AAAAGAAGAAGAAGAAACAACTCACAACTGGCTTTTAAAAATGAAATGAAATGTT 899	1939 AAAGAAGTGCAGTGAACAAGATTCACACACTGGCTTTAAAGATCAAAATGAATG		2119 CCAGAAGACGAAGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178 1080 ACTTGAAAAGAGTACAGGACAGA 1102

⋩

ध

ŏ ⊁ ĕ

化成 化 成 化 成 化 成 年 成 年 成

1279 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA	CCAGTITCATATCATCAGGGGTACATGAATTTGAAAGCCCATCAGGGCTGGGTTTGACACGCCATCAGGGCTGGGTTTGATGATGAGGGGTAGGGTTTGA	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1399 TAATATCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA		Qy 421 TAGCAIGGAAAACAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479 	Qy 480 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAACAAGGAAAATGGAGGAAGA 539	Qy 540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 599	Qy 600 AGAAGATCTAGAACAAGAAGTCAGGGTCAATTCTCTCACTCA	OY 660 IGAIGAAICTAGIGGAGAICACGCAACTGCTGCTTTGGAACAACATAAGGTATTGGG 719 Db 1759 IGAIGAAICTAGIGGAGAICACGCAACTGCTTTGGAACAACATTAAGGTATTGG 1818	Qy 720 AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACGGCIGGGIICTITIACAAGACAI 779 1819 AGAICGAIGGGCAAACAICIGIAGAIGGACAAAGACCGCIGGGIICTITIACAAGACAI 1878	Qy 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839 1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1938	Qy B40 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 899 Db 1939 AAAAGAAGATGCAGTGAACAAGATTCAACAAGACTGGCTTTAAAGATCAAAATGAAATGAAATGTT 1998	900 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAGAAAAGAAAAGCAATCCAT 959 1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAGAAAAAGGAATCCAT 205	Qy 960 GGGCAAACTGTAITCACTCAAACAAGATCTTCTTCAACACTGAAGAATAAGTCAGTGAC 1019 	Qy 1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCGGTGTTGGGATAATTAGTCCAAA 1079	Oy 1080 ACTTGAAAAGTACAGCACAGA 1102 Db 2179 ACTTGAAAAGTACAGCACAGA 2201		ACCESSION M18533 M17154 M18026 M20250 VERSION M18533.1 GT:181856 KEYWORDS SOURCE Homo sapiens (human) ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
b 1759 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1818	Y 720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 779 b 1819 AGATCGATGGGCAAACATCTGTAGATGACAGAGACCGCTGGGTTCTTTTACAAGACAT 1878	y 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839 b 1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1938	y 840 aaaagaagatgcagtgaacaagattcacacaactggctttaaagatcaaaatgta 899 	900 ATCAAGTCTTCAAAAACTGGCGGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 1999 ATCAAGTCTTCAAAAAATGGCGGTTTTAAAAGGGGATCTAGAAAAGAAAAGAAAAGCAATCCA	960 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 101 2059 GGGCAAACTGTATTCACTAACAAGAAGATCTTCTTTCAACAACAAGAATAAGTCAAGTAGC 211	1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA	SILY CCASAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAG	COCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCO	from Patent	AX538581.1 GI:25271086 Homo sapiens (human) Homo sapiens	Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalla, Eutheria, Primates, Catarrhini, Hominidae, Homo. EFERENCE I AITHORS Chamberlain I S and Harmer S O	Mini-dystr Patent: WO THE REGENT	ource	Query Match Query Match Best Local Similarity 99.9%; Pred; No. 6.98-257; Match 100 Similarity 99.9%; Pred; No. 6.98-257;	GAGCTATGCCTACACACAGGCTCTATGCTCCTCTGACCTACACGGGCCCTT 60	y 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120 	y 121 TGAAGTAAACCTGGACCGTTATCAAACACTTTAGAAGTATTATCGTGGCTTCTTTC 180

REFERENCE AUTHORS JOURNAL MEDLINE PUBMED

REFERENCE AUTHORS TITLE REFERENCE AUTHORS TITLE

MEDLINE PUBMED

JOURNAL

JOURNAL MEDLINE PUBMED COMMENT

FEATURES

```
NEXT TIGHT TO THE TOTAL THREAD LEGISLATION TO THE TOTAL THREAD LEGISLATION TO THE TOTAL THREAD LEGISLATION TO THE TOTAL THREAD LEGISLATION TO THE TOTAL THREAD LEGISLATION TO THE TOTAL THREAD LEGISLATION THREAD LEGISLATION TO THE THREAD LEGISLATION THREAD LEGISLATION TO THE THREAD LEGISLATION TO THE THREAD LEGISLATION TO THE THREAD LEGISLATION TO THE THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THREAD LEGISLATION THR
(bases 1 to 1699)

Koendy, M., Hoffman, B.P., Bertelson, C.J., Monaco, A.P., Feener, C. and Kunkel, L.M.

Komplete cloning of the Duchenne muscular dystrophy (DMD) cDNA and preliminary genomic organization of the DMD gene in normal and affected individuals

87273512
3607877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DSĪKQASEQLNSRWIEFCQLLSERLNWLEYQNNIIAFYNOLOQLEQMTTABNWLKIQ
PTTPSEPTAIKSQLKICKDEVNRLSGLOPQIERLKIQSIALKEKGGGPMFLDADFVAF
TNHFKQVFSDVQAREKELQTIFDTLPPMRYQETMSAIRTWVQQSETKLSIPQLSVTDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eineořigeloàlossloboosclytstykemskkapseíšrkyosefeeíegrwk
Klssolvehcoklebomnklrkionhiotlkkmmaevdvfikeempalodseilkkol
Kocrlivsdiotiopslnsvneggokiknbappefasrletelkeintomdhmcoovy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AŘKEALKGGLEKTVSLOKDLSEMHÉMNTQAEZEYLERDFEYKTPDELOŘAVEEMKŘAK
BEAQOKEAKVKLLTESVNSVIAQAPPVAQBALKKELETLTTMYQMLCTRLNGKCKTLE
EVWACWHELLSYLEKANKMINEVEFKTKTTENIPGGAEEISEVLDSLENLMRHSEDNP
NQIRILAQTLTDGGWNDELINEELETPNSKMELHERAVRROKLLEGGSIQSAGETEKS
LHLIQESLTFIDKQLAAYIADKVDAAQMPQEAQKIQSDLTSHEISLEEMKKHNQGKEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         On May 25, 2000 this sequence version replaced gi:340693. Draft entry and computer-readable sequence kindly provided by M.Koenig, 01-APR-1988 The severity of muscular dystrophy is determined by the size of the deleted DNA segment. Deletions found in different parients were from positions 302-2200, 473-1168, 1691-1810, and 1169-301 from positions 302-2200, 473-1168.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="AAA53189.1"
/db_xref="G1:18.1885""
/translation="MLWWESPDCYEREDVOKKTFTKWVNAQFSKFGKQHIENLFSDL
QDGRRLLDLLEGLTGQKLPKEKGSTRVHALNNVNKALRVLQNNNVDLVNIGSTDIVDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1678 to 3830)
Hoffman, E.P., Monaco, A.P., Feener, C.C. and Kunkel, L.M.
Conservation of the Duchenne muscular dystrophy gene in mice and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Koenig,M., Monaco,A.P. and Kunkel,L.M.
The complete sequence of dystrophin predicts a rod-shaped cytoskeletal protein
C2153(2), 219-226 (1988)
88194521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1. .13957
/organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="texon:9606"
/chromosome="X"
/map="Xp21.3-p21.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Science 238 (4825), 347-350 (1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="muscle"
/dev_stage="fetus"
/note="G00-119-850"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/product="dystrophin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .13957
/gene="DMD"
209. .11266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 13957)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="DMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       88018015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3659917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           humane
```

gene

CDS

AGRUSGIDVAQKKLODVBKKFRLFQKPANFELELGGEKKILLDEVKGHLPALDETKSVE

AGRUSGURICVUKTKGESPUKRENTKTGRQIVQKKQTENPKELDERVTALKLIY

RELGAKVTERKQOLEKCLIKERKRENENVLTEWILAATDMELTRESAVEGMENDES

BEGAKVTERKQOLEKCLIKERKRENENVLTEWILAATDMELTRESAVEGMENDES

BEGARATQUEI EKOKVHLKSITEVGEALKTVLGKETLUEDKKKELDERVTALKLIN

BELGAKVTERKQOLEKCLIKERENTKTALIQADTLILDESBEKKROQKEDULKTLINATATELE

EWINILLE YQKHMETFDONVDHITTWI 10ADTLILDESBEKKROQKEDULKTLINATATELE

ERRETKI KOQLLOTHHNALKDIE KRUDMEDENTUKELLORGDNLGORI TDER

KREEIKT KOQLLOTHHNALKDIES ORRKALEI SHOWYQTKROADDILKCLDDIEKKL

ASLEEPERDEKKI KEI DIRELOKKKEELNAVRROAGELSBEDGAAMAVEPTOI OLSKRWRE

ILINAPDI CAKLEPLER I OGGVNLKEEDMENDMELE SVYPSTYLTETTHVSOALLEVED

LLINAPDICAKUFENDROAGNIN KOORGERPEN

ERRETKI KOQLLOTHHNALKDIES ORRKALEI SHOWYQTKROADDILKCLDDIEKKL

GEALSQLDFVOREVINNOTYRORGGERPENS VERKRERFHDI KI FROMUTEBERGFLEVEN

LESKEAGFRELNFACHTIN KELLOGGROTVVRTINATGEEI I OKSSKTURDE

REGOVELLYBELEDAGGI LOKORGERPENS VERKRERFHDI KI FROMUTEBERGFLEVEN

RALPERKOGEI RAGTI KOLGOLEKKLEDELEBOLNHLLILMES PIRNOLEET YNORGEGFP

VGETEI AVGAKQPDVEEI LEKGGILYKEKREDELERANDIS SEMILAVRANTALOGERP

KALPERKOGEI RAGTI KOLGOLEKKLEDELEBOLNHLLILMES PIRNOLEET YNORGEFPU

VGETEI AVGAKQPDVEEI LEKGGILYKEKREATOPVKRLEDIS SEMILAVANTALOGERF

KLEOVALLIVERLEDAGGI KONTOLEDINEMI KOKATOODLEORETTO

VGETEI AVGAKQPDVEEI LEKGGILYKEKREADIS FRANDLENVALLDEN SAD

DTRKVHMITTENI VEGRY WYTGLIPTERTALDEN SCHLEKLLEDS SAD

DTRKVHMITTENI VEGREVILKOWODLEGEI EAHTDVYHULDEN SEMILAVYANTLOGELEKLY VQ

ERRELDPEREKGERLENGWOOLLEDINGNEOOLNE TREED THERETGELEGELEK VQ

ERRELDPEREKGERLENGWOOLLESTERALLENGWOOLLESTANDEN SAULE FRANDLYNNYELCOGET

SROAFLIGERPAANTSTERKALLENGWOOLLESTANDEN SAULESTANDEN SAULE FRANDLYNNYELCOGET

SROAFLIGENDAN TREILERKOARSERALKKALRER TANDEN SAULE TOTTER LOGE OFF SAUNTELLENGWENTEN TOTTER T

IGIN

```
1158
                                                                                                                                             1218
                                                                                                                                                                                                    1278
                                                                                                                                                                                                                                                             1338
                                                                                                                                                                                                                                                                                                                                                                                                                                   1518
                                                                                                                                                                        180
                                                                                                                                                                                                                                240
                                                                                                                 120
                                                        9
                                                                                                                                    TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAGAGAG
                                                                           GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACAGGCCCATT
                                                                                                                   TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                          CCAGITICALACICALGAGGGIACAIGAIGGAITITGACAGCCCAICAGGGCCGGGITGG
                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGCACCCATT
                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                    rgaagraaaccrggaccgrrarcaaacagcrrragaagaagaagrarrarcgrggcrrcrrrc
                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGCACACAGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                             recreaegacacarrecaaegacacaagagagarrrrcraargareregaagregreaaaga
                                                                                                                                                                                                                                                                                                                                                TAATATICTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                         AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                              Gaps
                             1,
Length 13957;
                             0; Indels
68.1%; Score 1091; DB 9; 99.9%; Pred. No. 6.9e-257; ive 0; Mismatches 0;
                              Conservative
               Similarity
 Query Match
Best Local Simil
Matches 1102; C
                                                                                     1099
                                                                                                                                              1159
                                                                                                                                                                                                      1219
                                                          Н
                                                                                                                    61
                                                                                                                                                                          121
                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                             1279
                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                      1339
                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                               1399
                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                     셤
                                                                                                                    8
                                                                                                                                             셤
                                                                                                                                                                        ò
                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479	& B &	1 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60
 AGGAAGA 16	: a	TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAAGGAGAG 12
540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 599	& 원	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
600 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	ò a	181 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTCTAATGATGTGGAAGTGGTGAAGA 240
660 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 719 	yo, Ob	241 CCAGITICAIACICCIAGAGGGIACAIGAIGGAITIGACAGCCCAICAGGGCCGGGIIGG 300
720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAT 779 	yo, du	301 TAATATICTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATTATCAGAAGATGAGA 360
780 CCTICTCAAAIGGCAACGICTIACIGAAGAACAGIGCCITITITAGIGCAIGGCITICAGA 839 	ζς q _Ω	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
840 aaaagaagatgcagtgaacaagattcacacaactggctttaaagatcaaaatgatgtt 899 	Sy Qy	421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATC-GAAACT 479
900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGGAAAAGCAATCCAT 959 	y da	480 GAAAGAGITIGAATGACTGGCTAACAAAAACAGAAGAAAAGAA
960 GGGCAAACTGTAITCACTCAAACAAGAICTTCTACAACAGCTGAAGAATAAGTCAGTGAC 1019 	yy G	540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 599
1020 CCAGAAGACGGAACGCTGGATAACTTTGCCGGTGTTGGGATAATTTAGTCCAAAA 1079 	\$ 4g	600 AGAAGAICTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGG
1080 ACTTGAAAAGAGTACAGCACAGA	Oy QD	660 TGATGAATCTAGGAGATCACGCAACTGCTTTGGAAGAAGAACTTAAGGIATTGGG 719
	å g	720 AGALCGAIGGGCAAACAFCIGIAGAIGGACAGAAGACCGCIGGGTICTITIACAAGACAT 779
AR220819 18377 bp DNA linear PAT 26-5EF-2002 Sequence 60 from patent US 6426186. AR220819.1 GI:23327696	<i>₹</i> 8	780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA 839
uknown. Unknown. Unclassified.	강 점	840 AAAAGAAGATGCAGTGAACAAGATTCACACACACTGGCTTTAAAGATCAAAATGAAATGTT 899
<pre>1 (bases 1 to 13977) Jones, KA., Volkmuth, W. and Walker, M.G. Bone remodeling genes Patent: US 6426186-A 60 30-JUL-2002;</pre>	송 옵	900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAAA
Location/Qualifiers 1.13971 /.organiam="unknown" /mol_type="genomic DNA"	상 옵	960 GGGCAAACTGTATTCACTCAAACAAGATCTTTTTCAACACTGAAGAATAAGTCAGTGAC 1019
Score 1091; DB 6	ò	0 CCAGAAGACGGAAGGATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA 107
Indels 1	음 &	2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178 1080 ACTTGAAAAGAGTACAGCACAGA 1102
	ž	

COCUS DEFINITION ACCESSION FERSION CEYWORDS

RESULT 11 HSDMDR

გ

ORGANISM

REFERENCE AUTHORS

TITLE

JOURNAL MEDLINE PUBMED

REFERENCE AUTHORS TITLE JOURNAL

```
/ DOOUTE TO THE TEAD TO THE TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE TEAD TO THE T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Davies, K.E.
Two human cDNA molecules coding for the Duchenne muscular dystrophy (DMD) locus are highly homologous
Nucleic Acids Res. 17 (13), 5391 (1989)
2668885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ů
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QGRVGNIIQIGSKIIGTGKLSEDEETBVÕEÕMNILNSRWECLRVASMEKQSNIHRVIM
DLQNQKLKELNDWLTKTEERTRKMEEEPLGPDLEDIKRQVQQHKVIQEDLEQEQVRVN
SLTHYVVVVDESSGDHATAALEEQLKVIGDRWANICRWTEDRWVILQDIILKWQRLTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNHFKQVFSDVQĀREKELOTIFDTLPPMRYQETWSAIRTWVQQSETKLSIPQLSVTDY
EIMEORLGELQALQSSLOEQQSGLYYLSTTVKEMSKKAPSEISRKYQSEFEEIEGRWK
KLSSQLVEHCQKLEEQMNKLRKIQNHIQTLKKWMAEVDVFLKEEWPALGDSEILKKQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EVWACWHELLSYLEKANKWLNEVERKLKTTENIPGGAEEISEVLDSLENLMRHSEDNP
NOIR LLAGYLLTDGGVMDELINBELETPRSRMESHEBARDKRCKLLEGGIGSAQETENS
LHI. GESLTFIPKGLAAY LAKUDAAAMPQBAQKIOSBLYSHBISLEBRKKHNGKKEA
AQRULSQIDVAQKKLQDVSMKFRLFQKPANFEQRLQESKMILDEVKWHLPALETKSVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ARKEALKGGLEKTVSLOKDLSEMHEWMTQAEEEVLERDFEYKTPDELQKAFEEMKRAK
EEAQOKEAKVKLLTESVNSVIAQAPPVAQEALKKELETLTTNYQWLCTRLNGKCKTLE
                                                                                                                                                                                                                                                                                                                        PRI 12-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="unnamed protein product; dystrophin (AA 1 - 3685)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sostental. A.

Direct Submission

Submitted (09-FEB-1989) Rosenthal A., Akademie der Wissenschaften Ger Dr. Zentralinstitut fler Molekularbiologie, Robert-Rosesle Str. 10, 1115 Berlin Burch, DDR see also M1853 and M20250 for Dmd segs.; discrepancies compared the M1853 chark act located at x14288 pos. 496, 1772, 1965, 2449, 1064, 5075, 5332, 5630 and 7194.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 12446)
Rosenthal.A., Speer,A., Billwitz,H., Cross,G.S., Forrest,S.M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLVSDIQTIQPSLNSVNEGGQKIKNEAEPEFASRLETELKELNTQWDHMCQQ
                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    muscular dystrophy; dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/mol type="mRNA"
/db_Xref="taxon:9606"
/chromosome="X chromosomal, Xp21."
/tissue_type="muscle"
/dev stage="fetal and adult."
99. .11156
                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                  Human mRNA for dystrophin.
X14298.
X14298.
Dmd gene; Duchenne muscular dystri
2179 ACTTGAAAGAGTACAGCACAGA 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . .12446
```

source

FEATURES

COMMENT

CDS

ORIGIN

OEVVOSOLNHCVNLYKSI.SEVKSEVEMVIKTGRQIVQKKQTENPKELDERVTALKLHY
NELGAKVTERRQQERKLIKSTROMERENALTERRALATUDERITYRSRAGDERDISE
NELGAKVTERRQQAKTILSEROMERENAVLTGKKETLYDEDKLSILDSNMIATSRAE
EMINLILEYQKHMET PDQNVDHITKMIIQATILDES EKKKPQQKEDVLKRLKAELND
ERPONSTIQKLLEPLEAEIQQCYNLKEEDFNKDNNEDDNEGTVKELLOSTRTERS I PLKELE
OFNSDIQKLLEPLEAEIQQCYNLKEEDFNKDNNEDDNEGTVKELLOSTRTERS I PLKELE
OFNSDIQKLLEPLEAEIQQCKKEELNAVRRQAEGLEEDGAAMAVETTORS I PLKELE
SERFAGFRRINTSOQALLEKTER OFNSTIGKKEELDNYQKRAGADDLLKKCLDDIEKKL
SIEDERDIEKCAEDFRICKKEELDNYKREEDENAVRELOSATFWRR
ILLAPDLCAKDFEDLEKQEELKNIKDSLOSGREID IKTRYRALGSATFWERVY
OEBALSQLDFQWEKVNKYYKDRQGFFDRS VEKWRR FHYDIIK IFNYGALGSATFWERVY
OEBALSQLDFQWEKVNKYYKDRQGFFDRS VEKWRR FHYDIIK IFNYGALLGSATFWENY
OEBALSGLDFQWEKVNKYYKDRGGFFDRS VEKWRR FHYDIIK IFNYGALLGSATFWENY
OEBALSGLDFQWEKVNKYYKDRGGFFDRS VEKWRR FHYDIIK IFNYGALLGSATFWENY
OEBALSGLDFQWEKVNKYYKDRGGFFDRS VEKWRR FHYDIIK IFNYGALLGSATFWENY
OEBALSGLDFQWEKVNKYYKDRGGFFDRS VEKWRR FHYDIIK IFNYGALLGSATFWYGY
OEBALSGLDFQWEKVNKYYKDRGGFFDRS VEKWRR FHYDIIK IFNYGALLGSATFWYGY
OEBALSELDFACGOLLKGLOLEEQLNHILLAMSFIRMIASITELSFEKGOLL
KATSONYALLOSEDRYKKALLEBOKGYDNINGSTEKKER
OEGARAALLESWCGETRAJ INGOWNEDOLEEQLNHILLLAMSFIRMIASITELSKOGHLYKERFAROOLNEN
OEGARAALLESWKEGFFYTUDA IOKKITTETVRINGSTEN OEGARAALLESWKEGFFYTUDA IOKKITTETVRINGSTEN OEGARAALLESWKEGFFYTUDA IOKKITTETVRINGSTEN OEGARAALLESWKEGFYTUDA IOKKIT

1048 1108 1228 1288 240 120 180 300 360 60 989 GAGCTATGCCTACACACACACGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1049 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAAGA ccagitircaracreargaggggracargargargarricaeaccearcagggeceggrigg 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA CCAGITICATACTCATGAGGGGTACATGATGGATITIGACAGCCCATCAGGGCCGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAATATTATCGTGGCTTTTTT 1109 reaagraaccresaccerrarcaacaccrrrasaasaacaararrarcersecrrerre Gaps DB 9; Length 12446; Indels .. 67.9%; Score 1087.8; DB 9; 99.7%; Pred. No. 4.2e-256; iive 0; Mismatches 2; Best_Local Similarity Matches 1100; Conservative 1169 1229 (241 н 181 301 121 Query Match g g ે ద ò 임 ò 엄 à $\dot{\delta}$ ò

421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT

AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC

361

8 8

8 S

420

```
1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1574
                                                                                                                                                                                                                                                                                                                       1215 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1274
                                                                                                                                                                                                                                                                                                                                                                                    1275 recreadeacacarrecaagcacaaggagagrirrcraargargreargreagaga 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                          1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1455 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1934
                                                                                                                                                                                                            1095 gagerargeceracacaggergerrargreaccacerergaceeracaggaggecarr 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1935 AAAAGAAGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAATGAAATGTT 1994
                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               839
                                                                                                                                                                                                                                          TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                    9
                                                                                                                                                                                                                                                              1155 TCCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTTCATTGATGAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                      1335 CCAGTTTCATACTCATGAGGGGTACATGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1515 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480 GAAAGAGTTGAATGACTGGCTAACAAAAACAAGAAGAAGAACAAGGAAAATGGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATCGATGGCCAAACATCTGTAGATCGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1875 ccricicaaarescaacercriacreaasaacasteccrirriagiscarescrificasa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                    GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                        TGCTGAGGACACATTGCAAGCACACAGGAGAGAGTTTCTAATGATGTGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                        Gaps
                                                                                                                                                     0; Indels 325;
                                                                                                                             Length 4402;
            /organism='Unidentified'
Location/Qualifiers
                                                                                                                          58.2%; Score 932; DB 6; I
79.7%; Pred. No. 7.4e-218;
live 0; Mismatches 0;
                                          1. .4402
/organism="unidentified"
/mol_type="genomic DNA"
/db_xref="taxon:32644"
.4402
                                                                                                                         Query Match
Best Local Similarity 79.7%
Matches 1277; Conservative
    source
 FT
                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                             source
                              FEATURES
                                                                                                ORIGIN
                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $ g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             रे वि रे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            $ A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sinichi, T.

Sinichi, T.

Sinichi, T.

Shortened dystrophin

JOURNAL Barent: JP 1999318467-A 3 24-NOV-1999;

SCIENCE & TECH AGENCY, NATIONAL CENTER OF NEUROLOGY AND PSYCHIATRY

SCIENCE & TECH AGENCY, NATIONAL CENTER OF NEUROLOGY AND PSYCHIATRY

OS Unidentified

PD 24-NOV-1999

PF 08-MAY-1999 JP 1998142134

PR SINICHI TAKEDA

PC CIZNIS/09, A65K48/00 CC

CC Strandedhess. CC

CC TOPOloci
                                                                                                                                                                                    1648
               1468
                                                                    1528
                                                                                                                                                                                                                                                                                                                                                          1828
                                                                                                                                                                                                                                                                                                                                                                                                                1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1079
                                                                                                                 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACAAAAAACGTGCTTCA 1588
                                                                                                                                                                                                                                          1649 igargaarcragrgcagarcacgcaacrgcractricgaagaacaacrraaggrarragg 1708
                                                                                                                                                                                                                                                                                                1709 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAT 18-JUN-2001
                                                                                                599
                                                                                                                                                        629
                                                                                                                                                                                                               719
                                                                                                                                                                                                                                                                       779
                                                                                                                                                                                                                                                                                                                               839
                                                                                                                                                                                                                                                                                                                                                                                       899
                                          539
                                                                                                                                                                                                                                                                                                                                                                                                                                             959
                                                                                                                                                                                                                                                                                                                                                 2009 CCAGAAAGACGGAAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAA
TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                    1469 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                        TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                        AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                               780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                       AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                      GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCAAACTGTATTCAATCAACAAGATCTTTTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                          GCCTCTTGGACCTGGAGGTCTTGAAGACCTAAAAGGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   αď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1080 ACTTGAAAAGAGTACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E30220
Shortened dystrophin.
E30220
E30220.1 GI:13017027
JP 1999318467-A/3.
                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1889
                                                                                                                                                                                                                                                                                                                                                                                                                                            006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020
               1409
                                                                                                                            1529
                                                                                                                                                       009
                                                                                                                                                                                    1589
                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2069
                                          480
                                                                                                540
                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ESULT 12
30220
OCUS
EFINITION
CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EFERENCE
AUTHORS
TITLE
JOURNAL
```

DMMENT

≿ ત ⋩

à

à

පු

g ਨ੍ਹ g

à

g

à

음 ਨੇ 셤 ਨੇ g

à

g ਨੇ

ਨੇ

```
11333. .>13887
11789. .11828
/rpt_type=tandem
/rpt_unit="ca"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3'UTR
repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2031 AATTGCGCCTCTGAAAGAGAAGAGGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1500 CATCTCGCCAAACAAAGAGGCCCTACTATATCAACCACGAGACTCAAACAACAACTGCTGGGA 1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2271 CATCTCGCCAAACAAAGIGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGA 2330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MAM 09-DEC-1998
                                                                                                                                                                                                  960 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                                                                                                                                                                          1020 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITGGGCATICAGCICTCACCGTATAACCICAGCACTCTGGAAGACCTGAACACCCAGAIG 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Canis familiaris (dog)

Canis familiaris

Canis familiaris

Canis familiaris

Bukaryota, Netazoa, Chordata, Craniata, Vertebrata, Euteleostomi,

Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis.

(bases 1 to 13887)

Carville, K.S., Mamn, C.J., Schatzberg, S.J. and Wilton, S.D.

Direct Submission

Submitted (04-JUN-1998) ANRI, Pathology, University of Western

Australia, Verdun Street, Nedlands, WA 6018, Australia

1. 13887
900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1140 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1200 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ------additional and a second and a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a second a sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1260 AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2091 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAAAGACCCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2151 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2211 CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1080 ACTIGAAAAGAGIACAGCACAGACCCTIGAAAGACTCCAGGAACTICAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF070485
Canis familiaris dystrophin mRNA, complete cds.
AF070485.1 GI:3982750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2331 CCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 2372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Canis familiaris"
/mol_type="mRNA"
/strain="breed Golden retriever"
/db.xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <1. .289
290. .11332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2002 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2002 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1440 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1320 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1560
                                                                                                                                                                                                                                                                                                        2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
AF070485
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
```

```
WKKLSSQLVEHCQKLEEQMAKIRKIQNHIKTIKKWITEVDVFLKEEWPALGDSSILKR
QKQCKLLVWDIQTIQPSLNSVNBGAQKMKNEAEPERAGKLETELRELNTQWDYWCRQ
VYARKEALKGGLDKTVSLQKDLSEMHEWTQAEEFLJERDFEYKTPDELQTAVBEMKR
AKBEAQQKRAKVKLITESVNSVIAQAPPAAQBALKKELDTLTTNYQWLCTRLNGKCK
LEBUWACWHELLSYLEKANKWLSEVEVKLKTTENISGGAEEIAEVLDSLENLMQHSED
NROIZILLAQTLTDGGVWDELINBELETFNSRWRELHEBEYRRQKLEDSIGARQK
KSHLIQESLSSIDKQLAAYIADKVDAAQMPQEAQKIQSDLTSHEISLEBMKKHNQGK
ETAQRVLSQIDVAQKKLQDVSMKFRLPGYRAANFGRLGESKMILDEVKHILDGSIGAAGE
VEQEVVQSQIANCVNLYKSLSEVKSEVEMVIKTGRQIVQKKQTENPKELDERYTALKL
TSWSDGLALNALIHSHRPDLFDWNSVVCQQSATQRLEHAFNIAKYQLGIEKLLDPEDV
ATTYPDKKSILMYITSLFQVLPQQVSIEAIQEVEMLPRPSQVTREEHFQIHHQMHYSQ
QITVSLAQGYERAPSFPKPRFKSYAYTQAAYVTTSDPTRSPLPSQHLETPEDKSFGRS
                                                                                             LTETEANLDSYQTALEEVLSWILSAEDALQAGGEISNDVEEVKEÖFHTHEGYMMDLTS
HQGRVGNVLQLGSQLIGTGKLSEDEETEVQEOMNLLNSRWECLRVASMEKQSNLHKVL
MDLQNQQLKELNDWLTKTEERTRKMEKEPLGPDIEDLKRQVQQHKVLQEDLEQEGVRV
                                                                                                                                                                                               NSLTHÄVVVVDESSGDHATAALEEQLKVLGDRWANICRWTEDEWVLLÖDILLKWQRFT
EEQCLFSAWLSEKEDAVNKIHTTGFKDQSBVLSNLQKLAVLKTDLEKKGTMDKLCSL
NGDLLSALKWTVVAHKWEAWLDNFAQRNDNLVQKLEKSSAQLSQAVTTTGPSLTQTTV
NGTVTWYTTREHILVFGSELPPPPQKCKQIIVDSEIRKELDVDITELHSWITRSE
AVLQSPERAIYRKEGNFSDLKEKVNALEREKKEKFRKLODASRAAQALVEQWVNEGVN
ADSIKQASEQLNSRWIEFCQLLSERLNWLEYQNNIITFPYNQLQQLEQWTTTAENWLKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LSESAACDALDOHNIKONDOPMDILOVINCITTIYDRIEQEHNNUNVPLCVDMCLNW
LLNVYDTGRIGRIRVLSFKTGIISLCKAHLEDKYRYLFKQVASSTGFCDQRRLGLLLH
DSIQIPRQLGEVASFGGSNIEPSVRSCFQFANNKPEIEAALFLDHWRLEPQSMVWLPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IOHYWRSINGESPISOPRSPAQILISIESEERGELERILADLEGRNRNLQAEYDRLKQ
QHEHKGLSPLPSPPEMMPTSPQSPRDAELIAEAKLLRQHKGRLEARMQILEDHNKQLE
SQLHRLRQLLEQPQAEAKVNGTTVSSPSTSLQRSDSSQPMLLRVVGSQTSESMGEEDL
                                                                                                                                                                                                                                                                                                                                                                                                      QPTTTSEPTAIKSQLKICKDEINRLSALQPQIERLKIQSIALKEKGQGPMFLDADFVP
FTNHFNQVFADVQAREKELGTIFDSLPPMRYQETMSTILTWIQQSETKLSIPQVTVTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YDIMEQRLGELQALQSSLQEQQNGLNYLSTTVKEMSKKAPLSDISRKYQSEFEEIEGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HYYBLGÂKVTERKOOLEKCLKLSRKMRKEMNALTEWLAÅTDMELTKRSAVEGMPSNLE
SEVAWGKATOKET EKOKVHLKSVTEVGEALKTVLGKKEMLVEDKLSLLNSNWTAVTSR
AEEWLNLILLEYQKHMETFDQNVDYTTNWIJQADALLDESEKKKPQOKEDILKRLKAEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LHRVAAAETAKHQAKCNICKECDIIGFRYRSLKHFNYDICQSCFFSGRVAKGHKMYF
MVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLPVQTVLEGDNMETPVTLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NFWPVDSAPASSPQLSHDDTHSRIEHYASRLKKMENSNGSYLNDSISPNESIDDEHL!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LSPPQDTSTGLEEVMEQLNHSPPSSRGRNTPGKPMREDTM'
```

QY 1020 CCAGAAGACGAAGATGGCTGGATAACTTTGCCCGGTTTGGGATAATTTAGTCCAAA 1079 PI	RESULT 14 E30219 LOCUS LOCUS DEFINITION Shortened dystrophin. ACCESSION VERSION E30219 VERSION E30219.1 GI:13017026 KEYNORDS ACCESSION E30219.1 GI:13017026 KEYNORDS AD E30219.1 GI:13017026 KEYNORDS AD E30219.1 GI:13017026	ISM CE RS AL	COMMENT OS JULGENCIALGA PU JP 1999318467-A/2 PD 24-NOV-1999 PF 08-MAY-1998 JP 1998142134 PR PR PR CINICHT TAKEDA	C12N15/0 Stranded Topology Key	source 14402 organism='Unident Location/Qualifiers .4402	, DB 6; Length 4402; e-202;	1244; Conservative 0; Mismatches 1 GAGCTATGCCTACACACGCTGCTTATGTCACCAC		121			DD 1395 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1454 OY 361 AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
Ouery Match Best Local Similarity 90.0%; Pred. No. 4.8e-214; Length 13887; Matches 993; Conservative 0; Mismatches 109; Indels 1; Gaps 1; 1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60 1183 GAGCTATGCCTACACAGGCTGCTTATGTCACCACTCTGACCCACGGAGCCCATT 60	61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120	181 TGCTGAGGACACATTGCAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240	TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA	361 AACTGAAGTACAAGAAGAGATGTCTCTAAATTCAAGAATGCCTCAAGGAAGC 420 1543 AACCGAAGTGCAGGAACAAATGAATCTCCTCAATTCAAGATGGGAATGCCTCAGGGTAGC 1602 401 HAACAAGTGCAAGAAAATGAATCAAATTCAAGATGAGATG	TAGCATGGAAAACAAAGCAATTTACATAAAGTTCTAATGGATCTCCAGAATCAGCAACT GAAAAGAGTTGAATGACAAAACAGAAGAGAAAGAACAAGAACAGAAATGGAAGAACACA GAAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAAAAGAACAAAGAAAAAGAAAAAGAAAAAGAAAAAGAAAAAA	O GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAAAAGGTGCTTCA 59	600 AGAGATCTAGAACAAGAACAAGTCAGGTCAATTCTCTCACTCGTGGTGGTGGTAGT 659	1843 CGATGAAICTAGTGGAACCATGCAACTTTGGAAGAACAACTTAAGGTACTGGG 1902 720 AGATCGATGGAACAACTGTAGAAGAACGACGGGGGGTTTTACAAGACAT 779	903 AGATCCATGGGCAAACATCTGTAGGTGGACAGAAGATCGCTGGGTTCTTTACAAGACAT 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGCA	1963 CCTCCTAAAATGGCAGCGTTTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCGGA 2022 840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 899 1	900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTACAAAAGAAAAAGCAATCCAT 959 	960 GGGCAAACTGTATTCACTCAACAACATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019

Oy 1500 CATCTCGCCAAACAAAGTGCC Db 2271 CATCTCGCCAAACAAAGTGCC Qy 1560 CCATCCCAAAATGACAGGCC Db 2331 CCATCCCAAAATGACAGGCC	MUSDYS MUSDYS TICN Mouse dystrophin mRN MIS025.1 GI:192971 N MIS025.1 GI:192971 OS dystrophin.		80 E 8	irce text	900	/mol_type="mR /db_xref="tax <13275 /ore="dvetro"	/nocon starte /rocon starte /brotein id="	/db xref="GI: /translation= DSYGPALEBYISM	LGLGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	TREQINYHAQEE TREQINYHAQEE AVYRKEGNISDLQ EQLINSRWTEFCQL TAIKSOI,KTOKDE	PDGVRAKERDOT GKLOALOSSIKEQ ESCOKLEEHMNKL GDIOTIOPSINSU	AGLÖKTVSLQKDL TKVKLLTETVNSV BLLSYLEKANKMI OTLIDGGWMDELL	4 bp up	Query Match Query Match Best Local Similarity 86.5%, Matches 954; Conservative Ov 1 GAGGTATGCTACACACAGG	61 2	
				6		0	•	ര ഗ	97 53	a. O	ø 0	6 0	a o	97	on o	o O
1455 AACTGAAGTACAAGGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1514 421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC 479 1515 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1574 1616 TAGCATGGAAAAACAAAAACAAAAAAAAAAAAAAAAAAA		TGAIGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 719	720 AGATCGAIGGGCAAACAICIGIAGAIGGACAGAAGACGCTGGGTTCTTTACAAGACAI 779	CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 839	AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 899	ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 959	1829	GGGCAAACTGTATTCACTCAAAGAATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019	CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079	ACTIGAAAAGAGIACAGCACAGACCCTIGAAAGACICCAGGAACTICAAGAGGCCACGGA 1139 	TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 1199	CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 1259	1260 AATTGGGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTGGCCAGCTTACCAC 1319 2031 AATTGGGCCTCTGAAAGAAACGTGAACGTCAATGACCTTGCTCGCCAGCTTACCAC 2090	TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 1379 	GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 143:	CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC 1499
1455 AJ 421 TJ 1515 TJ 480 GJ	540 GCCTCC 1635 GCCTCC 600 AGAAGI 1695 AGAAGI	660 TA 1755 TA	720 A	780 C		1830 - A 000	1830 -	960 G 1830 -		1080 2	1140 1	1200 0	1260 /	1320 7	1380 (1440 (
2 2 2 2 2	* 4 * 4	8 & 8	ري 100 100	<u>ک</u> ج	3	6 & 6	원	\ \ \ \ \	상염	95 PP 05	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	상	\$ g	දු පු	& a	oy Db

```
CCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGA 1559
           ROD 27-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gerjerjyjeję reckaccarokackacka 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sácháchtálahachachandarrachadadadadan 61
                                                                                                                                                             hordata, Craniata, Vertebrata, Euteleostomi,
odentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                A.P., Feener, C.C. and Kunkel, L.M. uchenne muscular dystrophy gene in mice and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 854.2; DB 10; Length 3275;
Pred. No. 9.5e-199;
0; Mismatches 148; Indels 1; Gaps
                                                                                                                                                                                                                                                Mouse adult heart, cDNA to mRNA.
lifiers
                                    CTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                       linear
                                                                                                       mRNA
                                                                                                     3275 bp 1
), partial cds.
                                                                                                                                                                                                                             47-350 (1987)
                                                                                                                                                                                                                                                                                    musculus"
                                                                                                                                                                                                                                                                                                                                            "AAA37530.1"
                                                                                                                                                                                                                                                                                                      xon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      stI site.
                                                                                                                                                                                                                                                                                                                        "ophin"
                                                                                                                                                     ouse)
```

	ACTIGNAMAGADIACACACAA 1102 	108	≿ ક
1081	-AAA-	102	ą
1079	O CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA	102	⋩
1021	ტ—ტ ტ	9 6 6	≿ ક
961	2 GTCAAGTCTTCACAAAATATCTACTTTAAAAATAGATCTAGAAAAGAAAAAGCCAACCA		ą
Q.	0	06	⋩
9	2 AAAAGAAGATGAATGAAGAACATTCAGACAAGTGGCTTTAAAGATCAAAATGAAATGAA	8	ရ
8	O AAAAGAAGATGCAGTGAACAAGATTGACACAACTGGCTTTAAAGATCAAAATGTT	84	≿
0 00	COTTCTAAATGGCAAGGTTTTTACTGAAGACAGTGCCTTTTTAGTACATGGCTTTTAGA	78	<u>≽</u> g
20 3	AGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTTACAAC	72	ဂ္ဂ
7	O AGAICGAIGGACAAACAICTGIAGAIGGACAGAAGACGGCTGGGITCIIITACAAGACAI	72	≥:
72	2 IGAIGAATCCAGCGGIGAICATGCAACAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG	99	, <u>a</u>
7.1		99	
659 661	O AGAAGATCTAGAACAAGAACAAGTCAGGGCAATTCTCTCACTCA	09	<u>ک</u> ج
9	2 GCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACAATAAAGGTGCTTCA	54	ည
599	0 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA	54	≿ ;
541	2 AAAAGAACTACATGATTAACAAAAACTGAAGAACTAAGAAATAAGAAATGGAGGAGA	4 4 0 8	a
4	2 TAGCATGGAAAAAAAAGGAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAAAT	42	۵
479	1 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT	42	. ≽.
421	A ACTIGAACIA AND AND AND AND AND AND AND AND AND AN	9 9	<u>.</u> .a
36	atgitctacagttaggaagtcaactagttggaaaagggaaattatcag	300	Ω
m	T.	30:	>-
301	2 ACAGITICAIGCICATGAGGATTCAIGAIGGAICTGACATCICATCAAGGACTIGTIGG	24.	Д
300	1 CCASITICATACTCATGAGGGGTACATGATTGAGAGGCCCATCAGGCCGGGTTGG	24.	>-
241	1 TGCTGAGGACACATTGCAAGCACAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 	18.	ъ д
-		C)	α
æ	TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTT		>

Search completed: April 5, 2004, 02:40:17
Job time : 4182.93 secs

```
April 4, 2004, 16:52:43; Search time 3673.37 Seconds (without alignments) 17079.796 Million cell updates/sec
                                                                                                                                                        US-09-845-416-12_COPY_900_3000
2101
1 gagctatgcctacacacagg......ttctgcatgattctatccaa 2101
                                                                                                                                                                                                                                                                                                       55026578
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                      27513289 segs, 14931090276 residues
                                                                                                                                                                                                                                                                                                       stal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                   ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                              4 nucleic - nucleic search, using sw model
                                                                                                                                                                                                                       IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                     inimum DB seq length: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_esthum:*
em_esthum:*
em_estov::*
em_estpl::*
em_htc::*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_gss_vri
gb_gssl:*
gb_gss2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_estfun:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em estom:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _est3:1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              est5
                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST: *
                                                                                                                                                                                                                   coring table:
                                                                                                                                                          itle:
arfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   tabase:
                                                                                                                                                                                                                                                                      sarched:
                                                                                                                                                                                          squence:
                                                                                             in on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			Description	BC036103 Homo sapi	AY399453 Homo sapi	AK044536 Mus muscu	AY399455 Mus muscu
SUMMARIES			ID	787 37.5 3870 11 BC036103	AY399453	AK044536	AY399455
			98	111	59	11	59
			Match Length DB ID	37.5 3870	5691	3056	2697
	æ	Query	Match	37.5	35.9	30.0	28.6
			Score	1	753.8	629.8	601.8
		esult	No.	1	7	m	4

426 7816 247 0550	394 0063 0722 0722 871	455.8 21.7 591 13 M490660 BM440860 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE629984 BE62988 BE229 BM2 BM2 BM2 BM2 BM2 BM2 BM2 BM2 BM2 BM2	o.M.;, casavatt., L.,, din, T.B., Toshiyuki,S., Loquellano,N.A., Peters,G.J., k,S.A., McEwan,P.J., tne,P.H., Richards,S.,, Gay,L.J., Hulyk,S.W., ren,B.J., Lu,X., Gibbs,R.A., Madan,A., Rodrigues,S.,
24105	ひとのひみと 0	80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	onato ., S.S. Bosa unara l,A.M.
Hrws	4000040	BX4909 BX6029999 BX6029994 AX03594 BX19669 BX6059 BY6256 BY144 CG6659 CG6659 CG6659 CG6659 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6699 CG6999	E, M. C. Raha S.J., S.J., A., C.
	41 M M 44 D 44 4	1111 111 111 111 111 111 111 111 111 1	ree, M. mate, J. C., J.
7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	000000000000000000000000000000000000000	DONTE COOLS COOLS	Soar Prance Prance Wul Wal Hale, Mus
M M O O O			7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7
सासासास	# # M M M M C	21	aplet neetz ramso ramso Kernal rley, l
8000	80 4 4 4 8 8 4 4 4 8 8 4 4 4 8 8 4 4 4 8 8 4 8 8 4 8	88 88 60 40 60 40 40 60 60 60 60 60 60 60 60 60 60 60 60 60	SCA CCA About VCI
	0 0 1 1 1 1 1 4 6 0 0 1 1 1 1 1 1 1 1	119 49 21 22 49 22 49 22 49 22 49 22 49 22 49 22 49 23 3 3 4 4 4 33 3 4 4 44 3 3 3 44 4 4 41 3 3 44 4 4 41 3 3 44 4 4 41 1 BOGUS DEFINITION VERSION VE	

N

1462

420

1522

480

1582

540

1642

009

1702

720

780

099

```
1343 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reargaarcragregagarcacecaacrecrecriregaagaacaacrraaggrarrege 1762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1763 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT 1822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1823 ccricrcaaaridecaacdiciracrdaadaacadrdccrrriragrccarddcirrcaga 1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS 12-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryogis, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. [ tbases 1 to 5691].

Clark, A.G. Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Reritera, S., Wangi, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, W. Witte, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5691 bp DNA linear GSS 12-DEC-2
Homo sapiens HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence,
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA This sequence was made by sequencing genomic exons and ordering them based on alignment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                              1583 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781 TICIGACCAGIGGAAGCGICIGCACCTITCICIGCAGGAACTICIGGIGGCTACAGCI
                              TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                 1403 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                      TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                    TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                            GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Murphy, B., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Direct Submission
                                                                                                                                  <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1883 AAAAGAAGATGCAGTGAAC 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841 GAAAGATGATGAATTAAGC 859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AY399453.1 GI:39755442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1643
                                    301
                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                             1463
                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AY399453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                        g
                                                                                                                                       ઠ
                                                                                                                                                                         엄
                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov beries: 17AK Plate: 48 Row: f Column: 7
This clone was selected for full length sequencing because it passed the following selection criteria: Similarity but not identity to protein
This clone has the following problem: retained intron.
Location/Qualifiers
1. .3870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
Tosub Library Preparation: Michael J. Brownstein (NHGRI) & Shiraki
Toshiyuki and Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Sequencing Group at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305
Web site: http://www-Bhgc.stanford.edu
Contact: (Dickson, Mark) mcdepaxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAAGAG 1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recreaegacacarrecaagcacacaagaagagarrrcraargargregaagregaaga 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1043 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
Sanchez, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y., Bouffard, G.G., Blakesley, R.W., Touchman, J.W., Green, E.D., A.C., Grimwood, J., Schmutz, J., Myers, R.M., Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Smailus, D.E., Schnerch, A., Schein, J.B., Jones, S.J. and Marra, M.A. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences
Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGITICATACICATGAGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (31-UDL-2002) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 3870;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type="mRNA"
/db_xref="taxon:9606"
/dlone="IMAGE:5274415"
/tissue_type="fxain, hippocampus"
/clone_lib="NIH_MGC_95"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   37.5%; Score 787; DB 11;
llarity 94.8%; Pred. No. 1.6e-172;
Conservative 0; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'note="Vector: pBluescript"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'organism="Homo sapiens'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone_Tib="NIH_N
/lab_host="DH10B"
                                                                                                                                                                                                                                                                    (bases 1 to 3870)
                                                                                                                                                                                                                                                                                             trausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Simil
Matches 814;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                             MEDLINE
PUBMED
EFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                   REMARK
COMMENT
                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RIGIN
```

ŏ ≿

≿ ŏ ≿ ŏ ≿ ĕ ≿

```
The FANION CONDECTION and the KIREN GENOME EXPLORATION ASSESSED OF 60,770 full-length CDNAS

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length CDNAS

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length CDNAS

By Chases 1 to 3056)

By Adachi, J. Aziawa, K. Akimura, T., Hara, A., Hashizume, W., Ruda, S., Furuno, M., Haramcto, K., Hasokar, T., Hizozane, T., Hayaenida, K., Hayaeu, M., Hizamcto, K., Hizozane, T., Katoh, H., Kawai, J., Kojimi, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, R., Ohno, M., Ohaato, N., Okazaki, Y., Saito, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sakai, D., Shibata, K., Shinadaki, R., Ohno, M., Ohaato, N., Sano, H., Sasaki, D., Shibata, K., Shinadawa, A., Takahahi, F., Takahahi, F., Takahahi, F., Takahahi, F., Takahahi, F., Takahahi, R., Muranatou, M. and Hayashizaki, Y. Toya, T., Yasunishi, A., Muranatou, M. and Hayashizaki, Y. Toya, T., Yasunishi, A., Bibata, C., Sakai, M., Babata, C., Sakai, M., Sakai, M., Tagamai, M., Toya, T., Yasunishi, A., Birect Submission Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Exploration Research Group, RIKEN Genome Center (GSC), RIKEN Yokohama Institute; 1.7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@genriken.go.jp, URL:http://genome-genriken.go.jp/, Pax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to genera full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matamuco, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K. Pujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsh, M., Inoue, Y., Kira, a. and Hayshizaki, Y. RIKBN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
Mus musculus adult retina cDNA, RIXEN full-length enriched library, clone:A930019F21 product:dystrophin, muscular dystrophy, full insert sequence.
                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Team and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FANTOM Consortium. Functional annotation of a full-length mouse cDNA collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The RIKEN Genome Exploration Research Group Phase II
                                                                                                                                                                                                                                                                                                           Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
992/9253
                                                                                                                 AKO44536.1 GI:26090404
HTC, CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 409, 685-690
                                                                                            AK044536
                                                                                                                                                                                                                                                                                                                                                                                                                                   10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20530913
           DEFINITION
                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                            ACCESSION
                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1004
                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      825 GCCICTIGGACCIGATCITGAAGACCIAAAACGCCAAGIACAACAACAACAAAAAAGGIGCITCA 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721 AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACCGCIGGGTICTITIACAAGACAG 780
                                                                                                                                                                                                                                                                                                                                                                                                                                   353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              404
                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465 IGCIGAGGACACATIGCAAGCACAAGGAGATTICTAATGAIGTGGAAGIGGIGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       585 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        645 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 705 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      945 rgargaarcragrogagarcacccaacrocrecririggaagaacaacrraaggrarrogg
                                                                                                                                                                                                                                                                                                                                                                             GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                   gagerargeeracacacaccerectrarereaceacerereacereracaceacecarr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354 rccrrcacagc-----rcccrgaagacaagrcarrrggcagrrcarrgarggagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ccagrificaracticargaggggracargarggarringacaggccarcagggggggrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                       <u>ئ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGC
                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                       12; Indels
                                                                                                                                                                                                                                                                    DB 29;
                                                                                                                                                                                                                                                              Ouery Match 35.9%; Score 753.8; DB 29; Best Local Similarity 97.4%; Pred. No. 9.6e-165; Matches 780; Conservative 0; Mismatches 12;
                                                                    /organism="Homo sapiens"
                                                                                               /mol_type="genomic_DN/db_xref="taxon:9606"
                                                                                                                                                                                /locus_tag="HCM0229"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1085
           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781 TICIGACCAGIGGAAGCGICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1065 CCTTCTCAATGGCAACGTCT
                                                                                                                                                  . >5691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3SULT 3
C044536
)CUS
              ATURES
                                                                                                                                                                                                           NIBI
```

HTC 20-SEP-2003

linear

MRNA

dq

3056

AK044536

```
1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AY399455 Seen Seen Seen Seen GSS 12-DEC-2003
Mus musculus HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                             TCTTCTAAAATGGCAGCATTTTACTGAAGAACAGTGCCTTTTTAGTACATGGCTTTCAGA 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukarycai, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I tbases I to 50%; Sinson, R., Thomas, P., Kejariwal, A., Tadd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Refritera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, White, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
1. 5697
/organism="Mus musculus"
/mol_type="genomic DNA"
/db_tref="text-axon:10090"
                                                                                                                            1664 AGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              411 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC
                                                                                                                                                                               TTCTGACCAGIGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 (bases 1 to 5697)
Clark,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A.,
Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu.F., Murphy,B.,
Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J.,
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTAACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 29; Length 5697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 601.8; DB 29;
Pred. No. 2.8e-129;
0; Mismatches 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <1.<sup>-</sup>.>5697
/locus_tag="HCM0229"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                              1784 AAAAGAAGATGCAATGA 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genomic survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY399455
AY399455.1 GI:39755444
                                                                                                                                                                                                                                                                                841 GAAAGATGATTAA 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 85.5%;
Matches 685; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14671302
                           1604
                                                                              721
                                                                                                                                                                               781
                                                                                                                                                                                                                             1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 4
AY399455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                      g
                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                              à
                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1303
                                                        Æ
                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="retina"
/clone_lib="mikEN full-length enriched mouse cDNA library"
/dev_stage="adult"
1. .3056
/note="dystrophin, muscular dystrophy (MGD|MGI:94909,
GB|NM_007868, evidence: BLASIN, 1000%, match=999)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 944 GAGTTATGCCTTCACACAGGCTGCTTATGTTGCCACCTCTGATTCCACACAGAGCCCCTA 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1124 TGCCGAGGATACATTGCGAGCACAAGGAGATTTCAAATGATGTTGAAGAAGTGAAAGA 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1184 ACAGITICAIGCICAIGAGGATICAIGAICIGACAICICAICAACGACTIGITGG 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1304 AGCTGAAGTGCAAGAACAAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTAGC 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1364 TAGCATGGAAAAACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATT 1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1484 GCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACATAAGGTGCTTCA 1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1004 TCCTTCACAGCATTTGGAAGCTCCCAGAGACAAGTCACTTGACAGTTCATTGATGGAGAC 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .064 GGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGTACTTTCATGGCTTCTTTC 1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 720
prepare mouse tissues.
Retina RNA was provided by Dr. Stefano Gustincich (Department of Neurobiology, Harvard Medical School, 220 Longwood Ave., Boston, 02115, USA) whose assistance is gratefully acknowledged. Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481 GAAAGAGTIGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1424 AAAAGAACTAGATGACTGGTTAACAAAAACTGAAGGGGAACTAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GAGCTATGCCTACACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTGAGGACACATTGCAAGCACAAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGITICATACTCATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1244 TAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTGAAGTACAAGAGCAGATGAGATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30.0%; Score 629.8; DB 11; Length 3056; larity 83.4%; Pred. No. 7.2e-136; Conservative 0; Mismatches 142; Indels 0;
                                                                                                                                                                                                                          /organism="Mus musculus"
mol_type="mkN"
strain="C57B1/6J"
/db_xref="MG12409854"
/db_xref="MG12409854"
/db_xref="mG12409854"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                715;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                               EATURES
```

RIGIN

⋩ વ ⋩ ă ≿ á વ ≿ ď ⋧ ă ⋩

⋩

⋩ ત્ર ≈ ð ⋩ ત્ ⋩ ă

```
Adachi, J., Alzawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hiramco, K., Hiraoka, T., Hrozane, T., Hori, F., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kaukawa, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohasto, N., Okazaki, Y., Saitoh, H., Sakai, K., Sakazume, N., Sanoh, H., Sakai, K., Sakazume, N., Sanoh, Y., Taqami, M., Taqawa, A., Takahashi, F., Takaku, Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Muranatsu, M. and Hayashizaki, Y. Takahashi, F., Takaku, Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Direct Submisted (IG-APR-2002) Yoshihide Hayashizaki, The Institute of Submitted (IG-APR-2002) Yoshihide Hayashizaki, The Institute of Exploration Research (RIKEN), Laboratory for Genome Exploration Research (RIKEN), Laboratory for Genome Exploration Research (RIKEN), RIKEN Genome Sciences Center (GSC), RIKEN Yokohama Institute; 1.7-22 Suchiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail genome-resegescriken, go.jp, URL: http://genome.gsc.riken.go.jp/, Tel: 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 81-45-503-9222, Prax. 8
Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsh, M., Inoue, Y., Kira, A., and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system--384-format Genome Res. 10 (11), 1757-1771 (2000)

NE 20530913

P. 1076661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
/protein_id="BAC38217.1"
/bc.xref="G1:26349155"
/translation="MODIVMOGCPYTLPRCHEWHAADRFHHSSSLRNTCPQPQVRAAV
/translation="MODIVMOGCPYTLPRCHEWHAADRFHHSSSLRNTCPQPQVRAAV
TIPAPPWDGAGDPCLSPKLLNGTVGATGPLEPSAMNLCWNEIKKKSHNLRARLBAFSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="C130016K19"
/tissue type="head"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation
6 60,770 full-length cDNAs
Nature 420, 563-573 (2002)
6 (bases 1 to 3753)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The RIKEN Genome Exploration Research Group Phase II Team and the FAANTOM Consortium. Functional annotation of a full-length mouse cDNA collection Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Division of Experimental Animal Research in Riken contributed to prepare mouse tissues.
Please visit our web site for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="unnamed protein product; dystrophin related r
2 (MGD|MG1:107432, GB|U43520, evidence: BLASTN, 99%,
match=807)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus"
/mol_type="mRNA"
/strain="C57BL/6J"
/db_xref="FANYOM DB:C130016K19"
/db_xref="MG1:2413800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dev stage="16 days embryo"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
Location/Qualifiers
1. .3753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AKO81426 MRNA linear HTC 20-SEP-2003 Mus musculus 16 days embryo head CDNA, RIKEN full-length, enriched library, clone:Cl30016K19 product:dystrophin related protein 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              951 TGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAAGAACAACTTAAGGTACTGGG 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1011 AGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGCTGGATTGTTTTACAAGATAT 1070
                                                                                                                                 TAATATICTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATIAICAGAAGAIGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    950
                                                                                                                                                                                                                                                                                                                     590
                                                                                                                                                                                                                                                                                                                                                                                                                                                              591 TAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGATGAAGA 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              831 GCCCTTTGGACCTGATCTTGAAGATCTTAAAATGCCAAGTACAACAACATAAGGTGCTTCA 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTGTTGGAAGAACAACTTAAGGTATTGGG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG 780
                                                                                                                                                                                                                                                CCAGTTICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       651 AGCIGAAGIGCAAGAACAAATGAATCICCIAAATICAAGATGGGAATGICTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 711 TAGCATGGAAAAACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 891 AGAAGATCTAGAACAGGAGCAGGTCAGGGTCAACTCGCTCACTCGACATGGTAGTAGTGGT
                                                                                                                                                                                                                                                                                                                     531 ACAGTITCAIGCICAIGAGGGAITCAIGAIGGAICIGACAICICAICAAGGACIIGIIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071 İCTİCTAAAAİĞGCAĞCAİTİ 1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781 TTCTGACCAGTGGAAGCGTCT B01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               full insert sequence.
AK081426
AK081426.1 GI:26349154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20499374
                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                           471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCESSION
ERSION
EYWORDS
DURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
FFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
PUBMED
SFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3SULT 5
<081426
```

TITLE

```
GTGCCTGCTTCATGAAGCCATTCAA 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTCCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rel: 617-495-1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
   1476
                                                                                                                                   1536
                                                                                                                                                                                                1235
                                                                                                                                                                                                                                                                   1596
                                                                                                                                                                                                                                                                                                                                1295
                                                                                                                                                                                                                                                                                                                                                                                                   1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
CB177816/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                              8 8
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P
P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
   à
                                                 В
                        SVLESAQAFICACIONE SELLESQUESCONICONE SERVICA SELVENCIATA SELVENCIARE SULESAQAFICACIONE SELVENCIARE SELVENCIARE SELVENCIA SELVENCIATURE SELVENCIARE SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA SELVENCIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAG 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGG 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1236 TGATCAAGGGATCCTGGCAGCCCGTGGGGGATCTCCTCATTGACTCTCTCCAAGATCACC 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCA 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGG 1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCTCTGGAACAGATCAACATCCGGTGGAAACAGCTCCAGGTGTCAGTGGCTGAGAGGC 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 815 GGGAGAAGCTGACAGCCCGCTGTGTAGATCAGCATCGCCACATTGAGCATACTCTGGAAC 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          816 AGGAACTICIGGIGIGGCIACAGCIGAAAGAIGAIGAATIAAGCCGGCAGGCACCIATIG 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       575 AAGGGGATGTGGCCCTGGTACAACAGGAGAAGAACACATGCAGCCTTCATGGAAGAAG 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rcadenchadeseccernearcherererenschriedanesecenseerrinististee 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1116 GGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     995 rccaagccardaagcrarrcaaagaagaarrcrcrcrcrcrdaaagaagaggggragarrag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCGCTGGGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       455 Accrececerceceras as desecritor de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta del la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta del la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconsta de la reconst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGAGATTATTGACTGGCTCAGCCAAAAGGATGAGGAGTTGTCAGCTCAGCTCCCCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGGCGACTITCCAGCAGITCAGAAGCAGAACGAIGTACATAGGGCCTTCAAGAGGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          accedanticaaaaccitracteecritrerardeaaecaecaacaereecaerearerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTATTGGAGATCCAAGGGGCAATGGAGGAATTGAGCAGTACTTTGACCCAAGCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAATGATCTGCCCCCCCCAGCTTGCCATCTCTGATGTGCACTTGTCAATGGAGAATTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 3753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 509.2; DB 11; Length
Pred. No. 1e-107;
0; Mismatches 523; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3731. .3736
/note="putative"
3753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 24.2%;
Best Local Similarity 61.1%;
Matches 823; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 현
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 প
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 બૅ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 성
```

```
595 bp mRNA linear EST 31-JAN-2003 similar to SW:DMD_HUMAN P11532 DYSTROPHIN. [1];, mRNA sequence. CB177816 CB177816 EST.7516.1 G1:29186206
1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1955
                                                                                                                                         ACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTT 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GIGICCIGICITITAAAACIGGCAICATITCCCIGIGIAAAGCACAITIGGAAGACAAGT 2015
                                                                                                                                                                                                          ACCACCAGGCTCAGACCACATGCTGGGACCATCCTAAGATGACTGAGTTATACCAAAACCC 1354
                                                                                                                                                                                                                                                                                                                                                                                                                            TGCAGAAGGCCCTTTGCATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACC 1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCATTGTCCTTTAAGACTGGCATCGCATGCCTGTGTGGCACGGAAGTGAAAAAA 1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1715 TICAGIATCITCTICAGCCAAGTAGCCAATICAGGCAGCCAGTGTGATCAACGCCATCTCG 1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2000)
Other ESTS: is21c01.y1
Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi Inoue
Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge,
MA 02138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 595)
Melton, D., Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K., Lemishka, I., Scarzce, M., Brestelli, J., Gradwohl, G., Clifton, S., Hillier, L., Marra, M., Pape, D., Wylie, T., Martin, J., Blistain, A., Schmitt, A., Theishg, B., Ritter, E., Ronko, I., Bennett, J., Williams, T., Jackson, Y., and Bowers, Y. Cole, R., Tsagareishvili, R., Endocrine, Pancreas Consortium
                                                                                                                                                                                                                                                                                                                                 1415 recadandececerececeredareregraecraracerecededeceredare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGG
                                                                                                                                                                                                                                                                                       TAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCATGACTTGCAGGCCAGTGAACATGTGATGGATGTGGAGGTCATTCACTGCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACTATITIATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        creccriciardaacdacidoaddaaaaaaaddarcciodicaardiocacididid
CTTCTGTCCAAGTTCCCTGGGAAAGAGCATTTTCTCCCCAATAAAGTCCCCTACTACAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              racacardadecircaderecercelarierirmearacerecedenedaladade
```

```
(Long) Homo sapiens cDNA clone IMAGE:30426742 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /close_lib="HR85 islet"
/close_logan: Pancreas; Vector: pBluescript SK(-); Site_l:
Not1: Site_2: Xho1; OnNA made by oligg-dT priming.
Size-selected on agarose gel. Average insert size ~1kb. 5;
Xno1 site was destroyed after directional closing.
Amplified once. Contact information: Hiroshi Inoue, MD,
Metabolism Div. (Alan Permutt Lab); Washington University
School of Medicine, Box B127, 660 South Ruclid Ave., St.
Louis, MO 63110; E-mail: hinoue@imgate.wustl.edu, Tel:
314-362-1916, Fax: 314-747-2692."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           389 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTTTC 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         449 recrireacadraringaaderecreaagadaagacareringgeagricaringargaagag 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 CCAGITICATACTCAIGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    269 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    209 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89 TAGCATGGAAAAACAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 30
                                                            Library was constructed by Dr. Hiroshi Inoue DNA sequencing by: Washington University Genome Sequencing Center For information obtaining a clone place contact: Dr. Hiroshi Inoue (hinoue@im.wustl.edu)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         509 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             329 TECTGAGGACACATTGCAAGCACAAGAGAGATTTCTAATGATGTGGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           149 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match

24.2%; Score 509; DB 14; Length 595;
Best Local Similarity 100.0%; Pred. No. 7.8e-108;
Matches 509; Conservative 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                            /mol_type="mRNA"
/db xref="taxon:9606"
/clone="IMAGE:653129"
/tissue_type="burified pancreatic islet"
/lab_host="bH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481 GAAAGAGTTGAATGACTGGCTAACAAAA 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29 GAAAGAGTTGAATGACTGGCTAACAAAA 1
                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
                                                                                                                                                               (hinoue@im.wustl.edu)
Seq primer: -40RP from gibco
High quality sequence stop: A48.
Location/Qualifiers
                               Email: dmelton@biohp.harvard.edu
Fax: 617-495-8557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                   MATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MIGIN
```

CD653550 777 bp mRNA linear EST 18-JUN-2003 AGENCOURT_14553000 NIA Human H1 Embryonic Stem Cell cDNA Library

SSULT 7)653550)CUS FFINITION

```
This is a long-transcript enriched cDNA library (Genome Res. 11: 1553-1558 (2001).

This is a long-transcript enriched cDNA library (Genome Res. 11: 1553-1558 (2001).

Cell line. Undifferentiated human Es cell line WA0.1 was obtained from Wicell Research Institute. Inc., Madison, Wi, cultured according to their instructions, on MEF feeders. They formed round colonies with defined edges and were positive for alkaline phosphatase, SEEA-4, OCT3, OCT4, REX1, UTF, TERT, SOX2, CX43 and CX45. They are negative for GATA2, GATA4, PDX1, NCAM, MSX1, FLT3, SSEA-1, TUBB3, NES, GATA, and EOMES. When confluent (18-10 days after plating), the ES cells from 4 X 6cm dishes were treated with 1 mg/ml collagenase, type IV (Invitrogen/GIBCO) for 5-10 min and gently scraped off with 5 ml pipette. RNA was purified with TRIZOl Reagent from Invitrogen. Protocol ref: Genome Res. 11: 1553-1558 (2001). [PMID111544199]) Double-stranded cDNAs were synthesized with an oligoldT) primer [Invitrogen:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.4g of total RNA, treated with T4 DNA polymerase, and purified by ethanol-precipitation. The CDNAs were ligated to Lone-linker LL-Sal4, purified by phenol/chloroform extraction, and separated from free linkers by Centricon-100 column. Then, the CDNAs were amplified by long-range high fidelity PCR using Ex Tag polymerase (Takara) with a primer Sal4-S for 25 cycles. The products were purified by phenol/chloroform extraction and Centricon-100 column. The CDNAs were digested with Sal1 and NotI enzymes and cloned into Sal1/NotI site of pCMV-SPORTE plasmid vector. The average insert size is about 3.6kb."
                                                                                                                                                                                                                                                                           In Librages 1 to 7/17)

In Librages 1 to 7/17,

National Institutes of Health, Mammalian Gene Collection (MGC)

National Institutes of Health, Mammalian Gene Collection (MGC)

Libragian Sancer Genomics

National Cancer Institute / NIH

National Cancer Institute / NIH

Bldg. 31 Rm10A07 Bethesda, MD 20892

Email: cgapbs-r@mail.nih.gov

Tissue Procurement: Irrene Ginis and Mahendra Rao, NIA

CDNA Library Preparation: Valan Piaco and Minoru Ko

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: MGC c

can be found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov

Plate: NAM513 row: a column: 23

High quality sequence stop: 715.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tissue type="Embryonic Stem cells"
/cell line="WAO1"
/lab host="DH10B (T1 phage-resistant)"
/clone lib="NIA Human H1 Embryonic Stem Cell cDNA Library
(Long)"
                                                                                                                                               Homo sapiens
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

1 (bases 1 to 777)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24.0%; Score 505; DB 14; L. Constity 100.0%; Pred. No. 7.1e-107; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /mol_type="mRNA"
/db_xref="taxon:9606"
/clone="IMAGE:30426742"
                               CD653550.1 GI:31892067
                                                                                                           Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
CD653550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Simi
Matches: 505;
```

```
TCTTT 1656
|||||
|CTTT 254
                                                                                                                                                          AGACT 1716
|||||
AGACT 314
                                                                                                                                                                                                        GACCA 1776
|||||
|GACCA 374
                                                                                                                                                                                                                                                     TTGAC 1836
|||||
TTGAC 434
                                                                                                                                                                                                                                                                                                TGCGT 1896
|||||
|TGCGT 494
                                                                                                                                                                                                                                                                                                                                              ATCCG 1956
|||||
|ATCCG 554
                                                                                                                                                                                                                                                                                                                                                                                          AAGTA 2016
|||||
|AAGTA 614
                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGGG 2076
|||||
|CTGGG 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vith help
/note="1st strand cDNA was primed with a NotI-oligo(dT) primer. Five prime end enriched, double-strand cDNA was digested with Not I and cloned into the Not I and EcoR V sites of the pCMVSPORT 6 vector. Library was normalized."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sostomi;
                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                an be
```

```
2017 CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG 2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324 dcadandedccriridcrirdchriciridadccridicaccriciatorangandccrirgancca 383
                      Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.

( (bases 1 to 1098)

Li, W.B., Gruber, C., Jessee, J. and Polayes, D.

Full-length cDNA libraries and normalization

Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /coll = CSONONOISI
/cell_line="HELA"
/coll_line="HELA"
/clone lib="Homo sapiens HELA CELLS COT 25-NORMALIZED"
/note="lst strand cDNA was primed with a NotI-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and EcoR V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sites of the pCMVSPORT 6 vector. Library was normalized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1597 CCACGAGACTCCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1657 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       504 égararerereaacrescrescrearerrarearacesesesaces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564 rerecrererriraaaacrescarearrirecerereraaacaearriresaagacaagra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             384 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1837 CACTATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCTCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           444 CACTATTTATGACCGCCTGGAGCAAGAACAAAAATTTGGTCAACGTCCCTCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGATATGTGTCTGAACTGGTGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  204 ccaccacactcaaccaactriccriccarccarccaaaridacacaccrcraccagrcrrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1717 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                            Contact: Genoscope denoise Sequencage Genoscope - Centre National de Sequencage BP 191 91006 BVRY cedex - France BP 191 91006 BVRY cedex - France Email: seqref@genoscope.cns.fr, Web : www.genoscope.cns.fr Library was constructed by Life Technologies, a division of Linvitrogen. This sequence belongs to sequence cluster 1955.r Contact: Peng Liang Email: fliang@lifetech.com URL: http://fullmgrh.invitrogen.com/ InvitroGen Corporation 1600 Faraday Avenue Genoscope sequence ID: CSIAKOOIZBIIQPI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     · 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 503.4; DB 13; Length 1098;
Pred. No. 1.8e-106;
0; Mismatches 1; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="CSODK001YB21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2077 CCTCCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          684 ccrccrrcracardarrcrarccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best_Local Simitaricy Autohes 504; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
ORGANISM
                                                                                                                                         AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1
                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                               / Adjusted in the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1777 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1897 GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGG 2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 05-MAY-2003
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1597 CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1657 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1837 CACTATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGT 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      260 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                320 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATATGTGTCTGAACTGGCTGCTGAATGTTATGATACGGGACGAACAGGGAGGATCCG 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rerecreterrinaaaacreecarcarrinecerereraaaecacarrineaaeaacaaara 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCACGAGACTCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1717 GCAGAAGGCCCTTTGCTTGGATCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        380 CACTATTTATGACCGCCTGGAGCAAGACACAATTTGGTCAACGTCCCTCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       °
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match

24.0%; Score 503.4; DB 14; Length 801;
Best Local Similarity 99.8%; Pred. No. 1.7e-106;
Matches 504; Conservative 0; Mismatches 1; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1098 bp mRNA linear BR365572 Homo sapiens HELA CELLS COT 25-NORMALIZED CONA clone CSODK001YB21 5-PRIME, mRNA sequence.
BX365572.1 GI:30366927
                                                                                                                                            /organism="Homo sapiens"
Plate: NDAM360 row: d column:
High quality sequence stop: 621.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTCCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccrccrrcrgcargarrcrarccaa 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ESULT 10
X365572
CCUS
EFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCESSION
ERSION
EYWORDS
JURCE
                                                                        EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RIGIN
```

ò

1716

323

1776

1836

443

1956

503

2016

360

2027

420

2087

```
/tissue_type="Human Placenta"
/lab_host="Human Placenta"
/lab_host="Human Placenta"
/lab_host="Organ: Placenta; Vector: pBluescriptR; Site_1:
alr.Xhol; Site_2: BanH; Oligo-dT primed using primer
5. TITTTTTTTTTTTTTTTVW3', size-selected for average
insert size_2: 3kb and normalized to ROT 5. This is a
primary library enriched for full-length clones and
constructed using the Cap-trapper method (Carninci,
preparation). Library constructed by M. Brownstein
(NIMH/NHGRI, National Institutes of Health). Note: This is
a NIH_MGC library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (human)
Homo sapiens (human)
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.
Mammahla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 797)

RS NIH-MGC http://mgc.nci.nth.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Autional Institutes of Health, Mammalian Gene Collection (MGC)
Contact: Robert Stransberg, Ph.D.
Email: cgapbe.r@mail.nih.gov
Tissue Procurement: Dr. Stefan Hansson
CDNA Library Preparation: Michael J. Brownstein (NHGRI) with help
and advice from Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: NDAMSO row: n column: 08
High quality sequence stop: 620.
Location/Qualifiers
Irce
//ordaniem=Homo.ganiem="Incomparies"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 29-APR-2003
1968 TIAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 rcaagcaagregecaagricaacaggarrirgreaccagcecagecagecregecrecricrirec
                                                                                              1848 ACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTC
                                                                                                                                                    241 Acceccrecaecaecacaecacaecaecaecaecceccececereceecere
                                                                                                                                                                                                            TGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTT
                                                                                                                                                                                                                                                                     301 reaacroscrecreargrirargaracedaceaacaacaacaarccerercrer
                                                                                                                                                                                                                                                                                                                                                                          361 TIABAACTGGGATCATTTCCCTGTGIAAAGCACATTTGGAAGACAAGTACATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2028 TCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGGCCTCCTTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CBS60722
AGENCOURT 13761995 NIH MGC 147 Homo sapiens cDNA clone
IMAGE:30344479 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23.5%; Score 494; DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="IMAGE:30344479"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CB960722.1 GI:30216839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2088 ATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481 ATGATTCTATCCAA 494
                                                                                                                                                                                                               1908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CB960722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                           à
                                                                                                                                                g
                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="Adult"
//dev_stage="Adult"
/lab host="McMillo"
/lab host="McMillo"
/clone lib="Human Retina cDNA (Un-normalized,
unamplified): hd/he"
/clone lib="Human Retina cDNA (Un-normalized,
unamplified): hd/he"
/note="Organ: Eye; Vector: pSPORTI; Neural retina tissue
was dissected from two 80 year old donors with no observed
eye disease: 100ug of total RNA was used for library
construction. A directionally cloned cDNA library in the
pSPORTI vector (Life Technologies) was constructed at
Bioserve Biotechnology (Laurel MD) essentially following
the protocols of the SuperScript Plasmid System full
details of which are contained in the manufacturer's
Instruction manual (http://www.lifetech.com/). First
strand synthesis was carried out using a Not I
         620 bp mRNA linear EST 15-JUL-2002 het33g04.yl Human Retina cDNA (Un-normalized, unamplified): hd/he Homo sapiens cDNA clone he23g04 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                    Wistow, G., Bernstein, S.L., Wyatt, M.K., Ray, S., Behal, A.,
Touchman, J.W., Bouffard, G., Smith, D. and Peterson, K.
Expressed sequence tag analysis of human retina for the NEIBank
Project: Retbindin, an abundant, novel retinal cDNA and alternative
splicing of other retinal-preferred gene transcripts
Mol. Vis. 8 (4), 196-204 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1668 ATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCC 1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1608 AAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGA 1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1788 AGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATG 1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               primer-adapter [5.-pgActAgrtcGcGAGCGGCCC(T)15-3']. EST analysis was performed on the unamplified library at the NIH Intramural Sequencing Center (NISC)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 ATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAAAAGGCCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 Tringcringdarcricticadecrearcreatedrangecringdaccadedaccrea 180
                                                                                                                                                                                                                                                                     Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.

    (bases 1 to 620)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 AAACAACTIGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1728 TTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 23.5%; Score 494; DB 13; Length 620; Best Local Similarity 100.0%; Pred. No. 2.5e-104; Matches 494; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Wistow G Section on Molecular Structure and Function National Eye Institute 6/331, NIH, Bethesda, MD 20892-2740, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: 301 402 3452
Fax: 301 496 0078
Faxis 301 496 0078
Faxis graeme@belix.nih.gov
Plate: 23 row: g column: 04
Seq primer: M13RP1 reverse primer (ABI).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
mol type="mRNA"
/db_xref="taxon:9606"
/clone="he23004"
/tissue_type="Retina"
                                                                                                                                                    BQ640063.1 GI:21764522
                                                                                                                                                                                                               Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22103461
                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
   BQ640063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
```

ጽ g ਨ੍ਹ 9

ą አ

ō >

ö

Gaps

875

334

935

454 995

394

```
TAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGAC 1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAGATTATTGACTGGCTCAGCCAAAAGGATGAGGAGTTGTCAGCTCAGCTGCCCCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               reaagrereaggeeeeeracarerarergeergeaggreagereaggeerreergeeeerreergeeee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGGCCCCAGAGAGCTGCCTCCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rgaardarcreeccaccaacrreccarrrergargrecacrrercargeagaarrecc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          935 aggeceriggaacagarcaacgreegargaaacaacracaggegecereagraagagagge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cercreteceaectrecereceaageaecaartreaeceaaraaagreeceraeraeae
                                                                                                                                                                                                                                                            <u> ACCTCGGGGTCGCCTAGAGGCCTTCTCAGACCACAGTGGAAAGCTTCAGCTCCCTCTTC</u>
                                                                                                                                                                                                                                                                                               876 GAGGCGACTTTCCAGCAGTTCAGAAGCAGCAACGATGTACATAGGGCCTTCAAGAGGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                       515 AGCACCCATTTGAGGAGTTAGAGGAGCCTCATTCTGAGAGGAAGATACCTCCCCGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAGAAGTTGACAGCCCGCTGTGTGGACCAGCACCGTCACATTGAGCGGACTCTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               accrerrocacarricaaccaarrocaccaacraacraaccaccaacracrercacccaaccreacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gagreceaageceartregagagecearregagarererrearregarrearreacreeagageacaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rccadecratraadcrentcaadaadaatrercccccardaaadaredadaadraaacrred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCA
                                                                                                                                                                                                                         756 ACCGCTGGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ageggarecagaárereagecgerrigiarggaágeagecgaeggegegegegagageregr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTT
                                                                                                                                                                                   .
0
                                                                                                                                                DB 29; Length 2874;
                                                                                                                                                                                   Indels
                                                                                                                                                Score 484.6; DB 29;
Pred. No. 5.4e-102;
0; Mismatches 561;
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
<1...>2874
/gene="DRP2"
/locus_tag="HCM3260"
                                                                                                                                                Query Match
Best Local Similarity 58.3%;
Matches 784; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1116
                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                               316
                                                                                                                                                                                                                                                                                                                                  335
                                                                                                                                                                                                                                                                                                                                                                                                                                              936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       995
                                                            gene
                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                 ठ
                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens DRP2 gene, VIRTUAL TRANSCRIPT, partial sequence, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2076
                                                          1656
                                                                                                                                 1716
                                                                                                                                                                                                       1776
                                                                                                                                                                                                                                                                             1836
                                                                                                                                                                                                                                                                                                                                                        1896
                                                                                                                                                                                                                                                                                                                                                                                                                              1956
                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              647
                                                                                                                                                                                                                                                                                                                   407
                                                                                             227
                                                                                                                                                                    287
                                                                                                                                                                                                                                          347
                                                                                                                                                                                                                                                                                                                                                                                         467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens

Bukaryota, Metazoa, Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (Dases 1 to 2874)

Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,

Todd, M.A., Tanembaum, D.M., Civello, D.R., Lu, F., Murphy, B.,

Reritera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J.,

Adams, M.D. and Cargill, M.

Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
1. 2874
                                                                                                                                                        GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                        GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                               GCACAACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                       CACTATITIATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                              GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gganangrenchenenegeneengaanennanganaceeeaceaacaeeaacaeearcee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cadatracertricaadeaagregeaagricaacagartricigaeeageeagerege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Tlod, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
                                                          CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGGTCTACCAGTCTTT
                                                                                                                                   AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                           CACTATITATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGT
                                                                                             Gaps
                       Ϊ,
                     Indels
     Pred. No. 2.6e-104;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cience 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -CCTCCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCTCCTTCTGCATGATTCTATCCAA 673
                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY408546.1 GI:39764517
   Similarity 99.8%;
05; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4671302
                                                                                                                                                                                                                                                                                                                     348 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           648
                                                                                                                                   1657
                                                                                                                                                                    228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2077
                                                                                                                                                                                                                                                                               1777
                                                                                                                                                                                                                                                                                                                                                        1837
                                                                                                                                                                                                                                                                                                                                                                                           408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            528
                                                                                                                                                                                                       1717
                                                                                                                                                                                                                                            288
                                                                                                                                                                                                                                                                                                                                                                                                                              1897
   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X408546
OCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCESSION
TERSION
TEYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
PUBMED
EFFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OMMENT
```

1115

1055

1175

694

634

1235

754

1295

1355

814

874

1415

934

1475

1535

994

1595

ò 임 ò qq ò 임 à g à g

```
Tunor Gene Index Institute, Cancer General Anatomy Figure (Control of Dayloished (1997)

Unpublished (1997)

Contact: Robert Strausberg, Ph.D.

Contact: Robert Strausberg, Ph.D.

Email: Gapbs-r@mail.nih.gov

Tissue Procurement: Dr. Eliot Spindel

CDNA Library Preparation: CLOWTECH

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: NCI-GGAP clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

http://ingellnl.gov

Plate: LLCM3135 row: e column: 11

High quality sequence stop: 583.
                                                                                                                                                                                                        1854
                                                                                                                                                                                                                                                                                                                                                                                         1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CB228986 Tinear EST 10-FEB-2003 AGENCOURT_11499247 NICHD_Rh_Ov1 Macaca mulatta cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  þe
                                                                                                                                                                                                                                                                                                  GGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTG 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2035 AGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCAGGCTGGGCCTCCTTCTGCATGATTC 2094
                                                                      135
                                                                                                                                                                                                                                                                                                                                           315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              435
                                                                                                                                                                                                                                                                                                                                                                                                                                  316 GCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTATAAAAC 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Primates; Catarrhini; Cercopithecidae; Croopithecinae; Macaca.

(Coases 1 to 728)

NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.

National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                             CAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTT
                                                       CAGATICTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTT
                                                                                                                    GGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACACCTCAAGCAAAA
                                                                                                                                                          136 GGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAA
                                                                                                                                                                                                        TGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCT
                                                                                                                                                                                                                                                    196 igaccacccanddararccidcagarrarraarrgringaccacrarrrargaccccr
                                                                                                                                                                                                                                                                                                                                           256 GGAGGAAGAGACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTG
                                                                                                                                                                                                                                                                                                                                                                                         1915 GCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTTTTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAAGTACAGATACCTTTTCAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            376 rescarcarricecrereralasecaearriresaagaeaagaeagaraearriceaasea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       436 AGIGGCAAGTICAACAGGATITCGIGACCAGGCGCAGGCTGGGCTCCTTCTGCAIGATIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .728 Macaca mulatta" /organism="Macaca mulatta" /mol_type="RRN#" /db xref="taxon:9544" /clone="IMAGE:6884820"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMAGE: 6884820 5', mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Macaca mulatta (rhesus monkey)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CB228986
CB228986.1 GI:28280564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Macaca mulatta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2095 TATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496 TATCCAA 502
                                                                                                                 1735
                                                                                                                                                                                                        1795
                                                                                                                                                                                                                                                                                                  1855 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1975
                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
CB228986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                 ð
                                                                                                                                                        g
                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CD701871 SSW bp mRNA linear EST 25-JUN-2003 EST18395 human nasopharynx Homo sapiens CDNA, mRNA sequence. CD701871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
1175 NNNCTGATCTGAACATTAAGTTCTCAGCTTATCGCACTGCCATGAAACTCCGCAGAG 1234
                                                                      TGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACC 1775
                                                                                                                 TCCAGAAAGCCCTGCGCTTGGACCTGGTAACTTTAACCACAGCCCTGGAAATCTTCAATG 1294
                                                                                                                                                             AGCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGA 1835
                                                                                                                                                                                                      Agcarcanciacadeccadadacacandanadangradaadacacantacacadacada 1354
                                                                                                                                                                                                                                                    CCACTATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCCTCTGCG 1895
                                                                                                                                                                                                                                                                                                  CTGCCTTATATGAACGTTTGGAGGAAAAAAGAGGCATCCTGGTCAACGTGCCACTCTGTG 1414
                                                                                                                                                                                                                                                                                                                                           TGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCC 1955
                                                                                                                                                                                                                                                                                                                                                                                    redacardadecreaaridecrecrearerrrrdaragrecreecedaadaree 1474
                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGICCIGICITITAAAACIGGCAICATTTCCCTGIGTAAAGCACATTTGGAAGACAAGT 2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGCATTGTCTTTTAAGACTGGCATTGCATGCTTGTGTGGCACGGAAGTGAAGGAAAAC 1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2016 ACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGG 2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1535 TTCAGTACCTCTTCAGCCAAGTGGCCAACTCAGGCAGCCAGTGTGACCAGCGCCACCTTG 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGT 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

    (bases 1 to 508)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Liu,X.-Q., Zhou,Y., Zhang,L.-J., Xu,H., Chen,H.-K., Pan,Z.-G. Zeng,Y.-X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transcriptional Gene Expression Profile of Human Nasopharynx
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        508;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23.0%; Score 483.8; DB 14; Length 99.6%; Pred. No. 5.7e-102; ive 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sun Yat-sen University
651 Dongfeng Road Bast, GuangZhou 510060, China
Tel: 86-1380-9770-743
Fax: 86-20-8775-4506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCCTTCTGCATGATTCTATCCA 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Grerccrecricardadeccarrca 1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: yxzeng@gzsums.edu.cn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CD701871.1 GI:32232501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: YiXin Zeng
Cancer Center
Sun Val
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity
Matches 485; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                          1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1615
                                                                   1716
                                                                                                                                                                                                      1295
                                                                                                                                                                                                                                                                                               1355
                                                                                                                                                                                                                                                                                                                                           1896
                                                                                                                                                                                                                                                                                                                                                                                         1415
                                                                                                                                                                                                                                                                                                                                                                                                                                     1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1595
                                                                                                                                                                                                                                                    1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
CD701871
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
```

ਨੇ

임

à d ò d

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 GGTAGCTAGCATAGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 GAAACTGAAAGAGTTGAATGACTGGCTGACAAAAACAGAAGAAGAACAAGGAAAATGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 GAAAGAACCCCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAAACATAAAGGT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGGGAGATGGGCAAACATCTGCAGATGGACAGAAGACCGCTGGGTTCTTTTACA 480
                                                                                                                                                                                                                                                                                                                                295 GGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGA 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTAGCTAGCATGGAAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGT 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGT 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAGGAACTTAAGGT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                715 ATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACAGTICTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCT 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 AGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT 540
Site_2: Sfi I; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.0-4.0 kb. Tissue pooled from pre-pubertal, post pubertal sn menopausal monkeys. Constructed by Clontech. Note: this is a NICHD Library."
                                                                                                                                                                                                                                                                                                                                                                                           1 GGTTGGTAATATTCTACAATTGGGAAGTCAGCTGATTGGAACAGGGAAATTATCAGAAGA 60
                                                                                                                                                                                                                                                                  0; Gaps
                                                                                                                                                                                             Length 728;
                                                                                                                                                                                          Query Match 22.8%; Score 480; DB 14; Length 72 Best Local Similarity 90.3%; Pred. No. 4.8e-101; Matches 513; Conservative 0; Mismatches 55; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           835 ACAGCTGAAAGATGATGAATTAAGCCGG 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCAGAAAAAAAAAATGTGGTGAACAGG 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                            355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            775
                                                                                                                               RIGIN
```

earch completed: April 5, 2004, 08:15:16 ob time : 3676.71 secs

```
Sequence 1, Appli
Sequence 60, Appl
Sequence 10, Appl
Sequence 10, Appl
Sequence 9, Appli
Sequence 9, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 15639, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 24, Appl
Sequence 3, Appli
Patent No. 5180910
Patent No. 5180910
Sequence 17, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Appli
Sequence 1186, App
Sequence 6, Appli
Sequence 2813, Appli
Sequence 4, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
                                                                                                                                                                                                                                                  April 4, 2004, 16:58:13; Search time 101.891 Seconds (without alignments) 11443.127 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 gagotatgcotacacacagg.....ttotgcatgattotatccaa 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-484-970B-60
US-09-32-10
US-09-42-048h-10
US-09-091-501B-7
US-09-091-501B-9
US-09-091-501B-9
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-091-501B-4
US-09-09-091-091
US-09-09-091-091
US-09-107-532h-1186
US-09-107-532h-1186
US-09-107-532h-1186
US-09-107-532h-1186
US-09-107-691-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09-108-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-668-313A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                682709 seqs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-845-416-12_COPY_900_3000
2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                         I nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDENTITY NUC Gapopt 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inimum DB seq length: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
109307
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match I
                                                                                                                                                                                                                                                                                                                                                                                                                                tle:
rfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stabase :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sarched:
                                                                                                                                                                                                                                                                :10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 asult
                                                                                                                                                                                                                                                                Ë
```

Sequence 76, Appl Patent No. 5210183 Sequence 22, Appl Sequence 263, Appl Sequence 17, Appl Sequence 17, Appl Sequence 23, Appl Sequence 13, Appl Sequence 13, Appl Sequence 13, Appl Sequence 13, Appl Sequence 13, Appl Sequence 13, Appl Sequence 12, Appl Sequence 12, Appl Sequence 12, Appl Sequence 12, Appl Sequence 12, Appl Sequence 12, Appl Sequence 2, Appl Sequence 2, Appl Sequence 2, Appl	ñ	AND TRANSFERRING TRANS-SPLI			Length 5952; Indels 0; Gaps 0;	CTGCACCTTTCTCTGCAGGAAC 821 	CGGCAGGCACCTATTGGAGGCG 881	AAGAGGAATTGAAAA 9	CAGA	AGAG 1
4 US-09-247-155-76 6 US-08-887-534A-22 4 US-08-887-534A-22 4 US-08-956-171E-263 3 US-09-007-005-17 2 US-09-0424-796-17 4 US-08-9426-290-1 4 US-08-9426-290-1 4 US-08-956-171E-3832 1 US-08-956-171E-3832 2 US-08-956-171E-333		US/09687875A HOD AND VECTOR FOR PRODUCING	%; US/09/687,875A -10-13 60/158,868 1-15 1-3.1	98) junction site junction site junction site	.2%; Score 1328.8; DB 4; .5%; Pred. No. 0; e 0; Mismatches 7;	acagiticigaccagiggaagcgi 	CTGAAAGATGATGAATTAAGC	AAGCAGAACGATGTACATA	ATGAGTACT	atgagiaciciigagacig baactciaccaggagccca
36 1.8 1886 36.6 1.7 1886 36.6 1.7 1886 36.5 1.7 1045 36.2 1.7 2089 36.2 1.7 2089 36.2 1.7 2089 36.2 1.7 2089 36.2 1.7 2089 36.2 1.7 168578 36.2 1.7 168578 36.2 1.7 168578 36.2 1.7 168578 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 36.1 1.7 2673 37 28 28 28 28 28 28 28 28 28 28 28 28 28	5.6 I 8/8	RESULT 1 US-09-687-875A-1 Sequence 1, Application US/09687875; Patent No. 6544786; GENERAL INFORMATION: APPLICANT: Xiao, Xiao APPLICANT: Liu, Paul TILE OF INVENTION: FITLE OF INVENTION: FITLE OF INVENTION: FITLE OF INVENTION: FITLE PEPERENNE: 0.0792	CURRENT APPLICATION NUMBER CURRENT FLING DATE: 200 PRIOR APPLICATION NUMBER: PRIOR PILING DATE: 1999-10 NUMBER OF SEQ ID NOS: 22 SOFTWARE: Patentin version SEQ ID NO 1 LENGTH: 5952 LENGTH: 5952 TYPE: DNA ORGANISM: Homo sapiens	FAILURE: NAME/KEY: misc feature LOCATION: (2897)(2898) OTHER INFORMATION: S4 junction NAME/KEY: misc feature LOCATION: (3198)(3199) OTHER INFORMATION: S2 junction	tch al Similarity 99 1333; Conservativ	762 GGGTTCTTTTACAAGA 3284 GGTCCCATTTGGAAGC	822 ITCTGGTGTGGCTACAG	882 ACTITICAGCAGT	942 CTAAAGAACCIGTA	3464 CIAAAGAACCIGIA 1002 CTTTGGAAGGACTAC
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		RESULT US-09-(1 Seque Pate APPI APPI TITI	CURREN CURREN PRIOR PRIOR NUMBER SEQ ID TYPE TYPE TYPE	(i)	Query Ma Best Loc Matches	& 93	ò 1	3 8 8	} &	g &

PE

CTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAG 3583

ď ⋩ ď ⋩ Я \gtrsim ð ⋩ ð ⋩ ä

```
1362 ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTCAAGGCACTTCCAAGGAGAAATTGCGCCTCTGAAAGAGAAGAGCGTGAGCCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGGCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTITICCAGCAGITICAGAAGCAGAACGAIGIACAIAGGGCCTICAAGAGGGAATIGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       actiticcagcagriccagaagcagaacgafgfacafagagggccficaagaggggaaftgaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aggaactricaagaggggaggargaggrigaaccrcaagcrgcgccaagcrgaggrigarca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGGATCTCCTCCTCCTCCTCTCTCTCTCTCCAAGATCACTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8598 GGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGCAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Length 13977;
RESULT 2
US-09-444-970B-60

Sequence 60, Application US/09484970B

Sequence 60, Application US/09484970B

Sequence 60, Application US/09484970B

GENERAL INFORMATION:
APPLICANT: VOLKWUTH, WAYNE
APPLICANT: VOLKWUTH, WAYNE
APPLICANT: WALKEY, MICHAEL G.
TITLE OF INVENTION: BOND REMODELING GENES
FILE REFERENCE: PB-014 US
CURRENT FILING DATE: 2000-01-18

NUMBER OF SEQ ID NOS: 172
SOFTWARE: PERL Program
SOFTWARE: PRAL Program
CENGTH: 13977

TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: unsure
COTHER INFORMATION: Incyte ID NO. 6426186 229357.11CB1
NAME/KEY: unsure
COTHER INFORMATION: 1721-11761, 12294, 13969

COTHER INFORMATION: a, t, c, g, or other
US-09-484-9708-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         762 GGGTTCTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62.7%; Score 1317.8; 99.4%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 99.4 Matches 1333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4183
                                                                                                                                                                                                                                                                                                                                                                 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4184 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 4243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTCTTTTAAAACTGGCATCATTTCCCTGTGAAAGCACATTTGGAAGACAAGTACAGAT 4543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGAGGCTGGGCCTCC 2081
                                          1182 AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 1241
                                                                                                                                                                                                                                                                                                                   3764 AGGGATCCTGGCAGCCCGTGGCCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGA 3823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3884 ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 3943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1662 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4244 AGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA 4303
                                                                                                                                       3644 AATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCC 3703
                                                                                                                                                                                                                                                                                                                                                                                                         3704 AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA
                                                                                                                                                                                                                                                                           1242 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1422 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4004 AGCIGCAIGAAGCCCACAGGGACITIGGICCAGCAICICAGCACITICITICCACGICIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4064 TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1602 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1124 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1782 ACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1364 TITATGACCGCCTGGAGCAAGAGCACAACATTTGGTCAACGTCCCTCTCTGCGTGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rerererakeregeregrandrrranganacegeaceaacaegaegareerere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCGAGGCTGGGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTIGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC
                CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tricriscardarricrariccaa 4623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2022
                                                                                                1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4604
                                                                                                                                                                                                                                                                                                                                                                 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1362
                1062
```

g

ਨੇ

ਨ੍ਹ

⋧

⋩

⋧

ጽ

셤

à

g à g à 셤 ò 음 à

ਨੇ

8657

821

8777

941

1001

8717

887

8837

1061

8957 1181 9017

1121

m

```
1362 ACCTTGCCAGCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCACTC 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1242 AGGGATCCTGGCAGCCCGTGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5976 ATTTCCCAGCAGTTCAGAAGCAGAATGATATACATAGGGCCTTCAAGAGGAATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      822 ITCTGGTGTGGCTACAGCTGAAAGATGATTAAGCCGGCAGGAGGCACCTATTGGAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     882 ACTITICCAGCAGITICAGAAGCAGAACGAIGIACAIRAGGGCCTICCAAGAGGAATIGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5916 craaagaaccreraarcargagracrerggagacrergagaarrarrereacagagacage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1062 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5796 CTCAGAATGTCACTCGTCCTACGAAAGCAGGCTGAAGGTCAACGCTGAATGGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1182 AGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5616 AGGGATCCTGGCAGCCAGTGGGGGATCTCCTCATTGACTCTCTGCAAGATCACCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1302 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ssse aagtcaaggcactricgggggaaarrgcaccricrraaagagaargrcaarcgrotcaarg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            s496 ACCTTGCACATCAGCTGACCACACTGGGCATTCAGCTCTCACCTTATAACCTCAGCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6096 gercecarringgaageaagrircheaceagreeaagecerrigearcrircrefreaceaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6036 frictrigiringgéracagérigaadargargaacrgagecegréaggeacearcearegereg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1122 AATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5676 AGGAACTICAGGAAGCIGCCGAÍGAACTIGGACCTCAAGIIGCGCCAAGCTGAGGIGAICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 19307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
54.7%; Score 1149.6; DB 3; Length
Best Local Similarity 91.1%; Pred. No. 0;
Matches 1221; Conservative 0; Mismatches 119; Indels
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,022A
FILING DATE: US/08/836,022A
FILING DATE: 28-OCT-1994
ATTONING APPLICATION DATE: US/08/331,381
FILING DATE: 28-OCT-1994
ATTONING APPLICATION NUMBER: US/08/331,381
FILING DATE: 28-OCT-1994
ATTONING DATE: 28-OCT-1994
ATTONING DATE: 28-OCT-1994
ATTONING DATE: 28-OCT-1994
ATTONING APPLICATION NUMBER: 31,215
RESTERNOR/DOCKET NUMBER: GNVPN.008PCT
TELEFRATION NUMBER: 31,215
RESTERNOR/DOCKET NUMBER: GNVPN.008PCT
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
TELEFRAM: 215-540-9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: unknown ; MOLECULE TYPE: CDNA US-08-836-022A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                    9317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9797
                                                                                                                               1481
                                                                                                                                                                                                                                                                                                                                               9377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9857
               ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGCACTC 9257
                                                                                                                                                                                                                                                                         TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9378 TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACG 9437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9438 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG 9497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1662 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9498 ACCIGAAIAAIGICAGAIICICAGCIIAAIAGAACIGCCAIGAAACICCGAAGACIGCAGA 9557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1722 AGGCCCTTTGCATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA 1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9618 ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA 9677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9678 ITTATGACCGCCTGGAGGAAGAACAATTTGGTCAACGTCCCTCTTTGCTGGGGTA 9737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1902 IGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1962 IGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2022 ACCTITICAAGCAAGIGGCAAGIITCAACAGGAITITGIGACCAGCGCAGGCT-GGGCCTC 2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9858 ACCTITICAAGCAAGTGGGAAGTICAACAGGATTTTGTGACCAGCGCAGGCTGGGGCCTC 9917
                                                                                                                                                                                                                                                                                                                    1782 ACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9738 IGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGGACGAACAGGGAGGATCCGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9558 AGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9798 TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT
                                                                                                                                                                                                    9258 regaadacercaacaccadaredaadeerrerecadereeccercdaddaceadeec
                                                                                                                               TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSULT 3
3-08-836-022A-10/c
Sequence 10, Application US/08836022A
Sequence 10, Application US/08836022A
GENERAL INFORMATION:
APPLICANT: Trustees of the University of Pennsylvania
APPLICANT: Fisher, Krishna J.
APPLICANT: Chen, Shu-Jen
APPLICANT: Chen, Shu-Jen
APPLICANT: Weitzman, Matchew
TITLE OF INVENTION: Improved Adenovirus Virus and
NUMBER OF SEQUENCES: 10
CORRESPONDENES: HOWSON and HOWSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Howson and Howson
STREET: Spring House Corporate Cntr, P O Box 457
CITY: Spring House
STATE: Pennsylvania
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9918 CTTCTGCATGATTCTATCCAA 9938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2081 CTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 19477
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy diak
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1842
                                                                                                                                                                                                                                                                         1482
                                                                                                                                                                                                                                                                                                                                               9318
                                                                                                                                                                                                                                                                                                                                                                                                                        1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1602
                                                         9198
                                                                                                                               1422
```

5917

1001 5857 1061

5977

ö

6037

881

821

5797

5737

1121

5677 1241 5617

1181

5557

1361

5497

```
5857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crrregaageacragaaaacrcraccagagcccagagaacrgccrccrgaagaaaaaa 5797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCAGAATGTCACTCGGCTTCTACGAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6096 GGTCCCATTTGGAAGCAAGTTCTGACCAGTGGAAGCGTTTGCATCTTTCTCTTCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rrcrrerriegcracaccidadadardadcidadecercacaccarcerege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1362 ACCTIGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     762 GGGTTCTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTITICCAGCAGTICAGAAGCAGAACGAIGTACATAGGGCCTITCAAGAGGGAATIGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5976 ATTTCCCAGCAGTTCAGAAGCAGAATGATATACATAGGGCCTTCAAGAGGGAATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTAAAGAACCTGTAATCATGAGTACTCTGGAGACTGTGAGAATATTTCTGACAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         crcagaargreacregecrecracgaaagcaggergaaggreaacgergaargggaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>AGGAACTTCAGGAAGCTGCCGATGAACTGGACCTCAAGTTGCGCCAAGCTGAGGTGATCA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seie adddarccrddchdccadrddddarcrccrcarrdacrcrcrddaagarcaccrrdaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1302 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5496 ACCTTGCACATCAGCTGACCACACTGGGCATTCAGCTCTCACCTTATAACCTCAGCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1182 AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ssse aacrcaaggcacrrcgggggggaarrigcaccrcrraaagagaargrcaarcgrgrcaarg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 3; Length 19307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
        SOFTWARE: Patentin Release #1.0, Version #1.

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/427,048A
FILING DATE: 21-Oct-1999
CLASSIFICATION: <UNKNOWN>
                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,022
ATTORNEY/AGRAY INFORMATION:
NAME: Bak, Mary E.
REGISTRATION NUMBER: 31,215
REGISTRATION NUMBER: 31,215
REFERENCE/DOCKET NUMBER: GNVPN.008PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215-540-920
TELEPHONE: 215-540-9818
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1149.6;
Pred. No. 0;
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: unknown
MOLECULE TYPE: cDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                 LENGTH: 19307 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 54.7%;
Best Local Similarity 91.1%;
Matches 1221; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-427-048A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{\sim}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 5077
                                                                                                                                                                                                              5257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4777
                                                          5377
                                                                                               1541
                                                                                                                                     5317
                                                                                                                                                                          1601
                                                                                                                                                                                                                                                        1661
                                                                                                                                                                                                                                                                                           5197
                                                                                                                                                                                                                                                                                                                                   1721
                                                                                                                                                                                                                                                                                                                                                                        5137
                                                                                                                                                                                                                                                                                                                                                                                                                1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 2021
                                                        5436 TGGAAGATCTGAATACCAGATGGAGGCTTCTACAGGTGGCTGTGGAGGACGACGTGTCAGAC
                                                                                               TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                5316 TTCAGGGTCCCTGGGAGAGAGCCATCTCACCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                        AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                           5256 AGACCCAAACCACTTGTTGGGACCACCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                   ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                                                      5196 Accreantangreaegriciceegranaegacreecareaagecreaeaa
                                                                                                                                                                                                                                                                                                                                                                                                                <u>AGGCCCTTTGCTTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCAC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                 5136 AGGCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCCTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5076 ACCICAAGCAAATGACCAGCCCAIGGATAICCIGCAGAIAATIAACIGITIGACIACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITATGACCGCCTGGAGCAGAAGACACAATITGGTCAACGTCCTCTCTCTGCGTGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTATGATCGTCTGGAGCAAAGACAATCTGGTCAATGTCCCTCTCTGTGTGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         renerceaecrederirencarentarianaraceaecaacaacaaganecereree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AcciriticaAgcaAgradcaAgricaAcradcririrgraAccaGcaraGcragGrarc
                      TGGAAGACCTGAACACAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 10, Application US/09427048A
Patent No. 6203975
GENERAL INFORMATION:
APPLICANT: Trustees of the University of Pennsylvania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: Spring House Corporate Cntr, P O Box 457 CITY: Spring House STATE: Spring House COUNTRY: USA COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Trans...
Chen, Shu-Jen
Weitzman, Matthew
Weitzman, Improved Adenovirus Virus and
Methods of Use Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: Howson and Howson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 19477
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Trcrecardariciaricaa 4757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TICTGCALGALICTALCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wilson, James M.
Fisher, Krishna J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ESULT 4
IS-09-427-048A-10/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF
                                                                                                                                     5376
                                                                                                                                                                                                                                                                                                                                   1662
                                                                                                                                                                                                                                                                                                                                                                                                              1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4776
                                                                                                                                                                          1542
                                                                                                                                                                                                                                                        1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2082
```

```
3510 hrockácomackáchokánánákocamahkackóchakakakákánhkákagaká 3569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTT 1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acagecagaagargeraaaagerrreggaaarrergaagaggegeracraegreke 3329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3330 gactiggatigatatigaaccaaagatiggaatgactitaaaagcaaaatctigctagcatcaggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3570 AAGAATATTCTGTCCTGAATGCTGTCGACCAGGCCCGAGTTTTCTTGGCTGATCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T-----GGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               645 ACATGGTGGTGGTAGTTGATGTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
TYPE: DNA
ORGANISM: Artificial Sequence
PEATURE:
NAMES/KEX: CDS
LOCATION: (11)..(6037)
PEATURE:
PEATURE:
PEATURE:
PEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 6045;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 26.1%; Score 547.4; DB 4;
Best Local Similarity 61.4%; Pred. No. 5.3e-160;
Matches 900; Conservative 0; Mismatches 556;
                                                                                                                                                                                                                                                        NAME/KEY: misc feature

) LOCATION: (724)...(758)

COTHER INFORMATION: Precise residue is left open

US-03-091-0918-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     장 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCITITICAAGCAAGTGGCAAGTTCAACTGGCTTTTGTGACCAGCGTAGGCTGGGTCTTC 4777
                                                                                                      5377
                                                                                                                                                                          1541
                                                                                                                                                                                                                                          5317
                                                                                                                                                                                                                                                                                                      1601
                                                                                                                                                                                                                                                                                                                                                                          5257
                                                                                                                                                                                                                                                                                                                                                                                                                                             1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITATGACCGCCTGGAGCAGAGGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rerercreacrescricical derritates races de la capaca de la contra de la 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de 1907 de
                                              1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGCCCTTTGCTTGGATCTTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA 1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTATGATCGTCTGGAGCAAGAGCACAACAATCTGGTCAATGTCCCTCTCTGTGTGGATA 4957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aggecettigetiggaletetetaggergeegergeaergeargtgargeegeegeaeeageae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                             5316 TTCAGGGTCCCTGGGAGAGAGCCATCTCACCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5256 AGACCCAAACCACTTGTTGGGACCACCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1662 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCICAAGCAAAAIGACCCACCAIGGAIAICCIGCAGAIAATIAACIGIIIGACIACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5436 regaladarchealanaccagardeadecrirchacagerdecrereseagaccerercagac
                                                                                                                                                                          1542 TCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                             1602 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S-09-091-091B-7
S-09-091-091B-7
Sequence 7, Application US/09091501B
Patent No. 6518413
GERREAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE OF INVENTION: Utrophin gene expression
FILE OF INVENTION: Utrophin gene expression
FILE OF INVENTION: UTOPHER: US/09/091,501B
CURRENT APPLICATION NUMBER: US/09/091,501B
PRIOR APPLICATION NUMBER: B98-06-18
PRIOR FILING DATE: 1996-12-19
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TICTGCATGATTCTATTCAA 4757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -09-091-501B-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1902
                                                                                                                                                                              1482
```

824

764

```
GCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAG 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3990 igaaiteatriaricaertaecterceactreacetecareceitecareceaaaearere 4049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4050 GCCAGCTAGATGACCTTAATATGCGATGGAAACTTTTACAGGTTTCTGTGGATGATGGC 4109
                                                                                                                                                                                                                                               GOGRADADATTIGAACCTGCACTGCCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAA 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3870 ccgreccia a red chi da a de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de consecuente de con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCA 1415
                                                                                                                 3690 AGAGAGCCCAAAAGATTGCCAAAGCCATGCGCAAACAGTTTCTGAAGTCAAAAAT 3749
1056 AGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGT
                                                                                                                                                                                                                                                                                                                                                                       1176 GACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1236 TGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3930 trgaaaaatcargccartracacaadaaatrgcaccaarcaacrrraaadrraaaacgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  충염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 % B
```

```
rcaaarddcrgaarardaadardaacacrraagaaacaaarccrarriddaddadarg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccaraccesaarcacracaadaccccaracaadacracacacaadarcaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAATGATTTATCCAGTCAGCTGTCTCCACTTGACCTGCATCCCTCTAAAGATGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAAACAGCTTCAGGAAGCCCACAGAGATTTTAGACCATCCTCTCAGCATTTTTCTCTCTA
                                                                                                                                                                                                                                                                                                ACATGGTGGTGGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAAC
                                                                                                                                                                                                                                                                                                                                          ACAGGCAGAAGATGGTAAAAGCTTTGGGAAATTCTGAAGAGGCTACTATGCTTCAACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                      7605 GACTGGATGATATGAACCAAAGATGGAATGACTTAAAAGCAAAATCTGCTAGCATCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cccarrirgaaggccaagcgcroaagagagagagaggargcroargrocaraaaagagcroa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGGCCTTCAAGAGGGAATTGAAAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGAATATTCTGTCCTGAATGCTGTCGACCAGGCCCGAGTTTTCTTGGCTGATCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T------GGAAGGACTAGAGAACTCTACCAGAGCCCCAGAGAGCTGCCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGAGGCCCCTGAAGAGCCAAGAAGCAACTACAATCAAAACAGAATTAACTCCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGAAAGTCTAAATGCTGTAACTAGCAATTGGCAAAAGCAAGTGGACAAGGCATTGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAŢCAAGGGATCCŢĢGCAGCCGGŢĢGGGGAŢCŢCCŢCCATCŢCCAAGAŢCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           trgaaaaaarcargecartragagaagaarrigcaccaarcaactraaagrraaaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCTA
                                                                                                                                                                                                                                                                                                                                                                                         705 AACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rrccaeccrracaecrccaerareaccarreraaeeccreeaeaceeeaerraaaeeaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAGAGCCCAAAAGATTGCCAAAGCCATGCGCAAACAGTCTTCTGAAGTCAAAGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gecageragargacerraarargegarggaacerrirracaggrirrergiggargaregee
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: Full length
OTHER INFORMATION: utrophin construct
                                                                                                                                                                                                   Length 10320,
                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                   Score 547.4; DB 4;
Pred. No. 7.7e-160;
                                                                                                                                                                                                                                                 0; Mismatches 556;
                                                                                   NAME/KEY: misc_feature

1 LOCATION: (724)..(758)

2 OTHER INFORMATION: Precise residue is left open

US-09-091-501B-9
                                                                                                                                                                                                     Query Match
Best Local Similarity 61.4%;
Matches 900; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8085
                                                                                                                                                                                                                                                                                                   645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4469
                                                                                                                                                                                 ACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTT 1655
                                                                                                                                                                                                                              ACCATCAAACACACCACCTGTTGGGACCATCCTAAAATGACCGAACTCTTTCAATCCC 4289
                                                                                                                                                                                                                                                                                                                       TIGCIGACCIGAATAATGIACGITTTTCIGCCIACCGIACAGCAATCAAAAICCGAAGAC 4349
                                                                                                                                                                                                                                                                                                                                                                     TGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACC 1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACTATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCG 1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCC 1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4530 TTGATATGTGTCTCAATTGGTTGCTCAATGTCTATGACACGGGTCGAACTGGAAAAATTA 4589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2016 ACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGG 2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4709
                           TTAAACAGCTTCAGGAAGCCCACAGAGATTTTGGACCATCCTCTCAGCATTTTCTCTCTA
                                                                                                                                  cercastrocascrecersesaasarcearricacaraaraaasarcecrarracarea
                                                                                                                                                                                                                                                                             TAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                  racaaaaaccacrarcrirggarcrcrragagrrgagracaacaaargaaarrrrcaaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCACAAAGTTGAAACCAAAAATGAACCAGCTCCTCAGTGTTCCAGATGTCATCAACTGTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      caacaactiaigaigeacireagcaaarecaraagaacciggicaacgirceacireig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTGCAGAGTTGGATTAATGTCTCTCTCCAAAGGTCTCTTGGAAGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4650 ACAGATATCTCTTTAAGGAAGTTGCGGGCCCGACAGAAATGTGTGACCAGAGGCAGCTGG
TCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGGCATCTCAGCACTTTCCA
                                                                                           AGCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M.
APPLICANT: Tinsley, Jonathon M.
APPLICANT: Davies, Kay E.
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT EDILOR DATE: 1998-66-18
FRIOR APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1998-12-19
FRIOR APPLICATION NUMBER: GB 9525962.8
FRIOR PILING DATE: 1995-12-19
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-0-24
FRIOR APPLICATION NUMBER: GB 9615797.9
FRIOR FILING DATE: 1996-0-24
FRIOR APPLICATION NUMBER: GB 9622174.2
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1996-10-24
FRIOR FILING DATE: 1096-10-24
FRIOR FILING DATE: 1096-10-24
FRIOR FILING DATE: 1096-10-24
FRIOR FILING DATE: 1096-10-24
FRIOR FILING DATE: 1096-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTCCTTCTGCATGATTCTATCCA 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4710 GCCTGTTACTTCATGATGCCATCCA 4734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 9, Application US/09091501B
Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: CDS
LOCATION: (11)..(10312)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 10320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JS-09-091-501B-9
                                         4110
                                                                                        1536
                                                                                                                                     4170
                                                                                                                                                                                 1596
                                                                                                                                                                                                                              4230
                                                                                                                                                                                                                                                                                                                       4290
                                                                                                                                                                                                                                                                                                                                                                     1716
                                                                                                                                                                                                                                                                                                                                                                                                                    4350
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4590
                                                                                                                                                                                                                                                                             1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1956
                                                                                                                             न्
                                                                                                                                                                                 ⋩
                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ă
⋩
                                         ă
                                                                                      ≿
                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
```

7904

7844

944

7724

824

7784

7604

7664

764

1115

8024

1235

1295

8444

```
Score 78.6; DB 4;
Pred. No. 1.7e-14;
0; Mismatches 74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Tingley, Jonathon M
APPLICANT: Tingley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT FILING DATE: 1996-12-19
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR APPLICATION NUMBER: GB 9525962.8
PRIOR PILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-26
PRIOR FILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SOFTWARE: PATENTING PATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SOFTWARE: PATENTING VET: 2.1
                                     CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1998-06-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Application US/09091501B
Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             733 AAACATCTGTAGATGGA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184 AGCTGTATGCCGCTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                  3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                               3.7%
Best Local Similarity 62.4*
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                               ) ORGANISM: Mus sp. US-09-091-501B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-091-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-091-501B-6
                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                       1926 TITAIGAIACGGGACGAACAGGGAGGAICCGIGICCTGICTITIAAAACIGGCAICAIII 1985
                                                                                                                    1753 TTTTTGATAGTGGTCGCAGCGGAAAGATGCGGGCATTGTCTTTTAAGACTGGCATTGCAT 1812
                                                                                                                                                             1813 GCTTGTGTGGCGCGCGGAAGTGAAGGAAAACTTCAGTACCTCTTCAGCCAAGTGGCCAACT 1872
                        1693 GAGGCATCCTGGTCAACGTGCCACTCTGTGGGCATGAGCCTCAATTGGCTCCTCAATG 1752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       685 AACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAG 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              625 CAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGC 684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76 GAAGGTGAATTCCTTAACTCATATGGTGGTGATTGTGGATGAAAACAGTGGGGAGAGCGC 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   136 cacagcigititiggaagatcagtracagaaacrigggigagcgcriggacagcigrracgcg 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16 ccnscalaaccrocritgalgalgaralaaagringdalagaggecrocaagggegg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     565 CCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGT
                                                                                                                                                                                                                                                         2046 CAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA 2100
                                                                                                                                                                                                                                                                                                1873 CAGGCAGCCAGTGTGACCAGGGCCACCTTGGTGTCCTGCTTCATGAGGCCATTCA 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
3.8%; Score 79.4; DB 4; Length 200;
Best Local Similarity 64.3%; Pred. No. 9.4e-15;
Matches 119; Conservative 0; Mismatches 66; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INPORMATION:
GENERAL INPORMATION:
APPLICANT: Tinaley, Jonathon M
APPLICANT: Tinaley, Jonathon M
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1998-06-18
PRIOR APPLICATION NUMBER: PCT/GE96/03156
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR APPLICATION NUMBER: GB 961579.9
PRIOR FILING DATE: 1996-07-26
PRIOR APPLICATION NUMBER: GB 962174.2
PRIOR PILING DATE: 1996-07-26
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver. 2.1
LENGTH: 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Urrophin gene expression
FILE REFERENCE: 620-42
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5, Application US/09091501B Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
GOGANISM: Rattus sp.
JS-09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    745 ATGGA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              196 CTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                 JS-09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -09-091-501B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
                           9
                                                                                                                 g
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ન
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                     ਨੇ
                                                                                                                                                             ጵ
                                                                                                                                                                                                                                                         ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
ö
                                                                                                         612
                                                                                                                                                                                                                      613 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAATCTAG 672
                                                                                                                                                                                                                                                                            4 ricarigraaarcricraaaaacrecraaaacaacaraaacarriccaaagrearcricaa 63
                                                                                                         553 TGATCTTGAAGACCTAAAACGCCAAGTACAACATAAAGTAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     553 TGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                   4 reaccrecerecerecasasecrecircaseasaserras
                                                                                                                                                                                                                                                                                                                                      673 TGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC
                                                   Gaps
                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
3.7%; Score 78.6; DB 4; Length 200;
Best Local Similarity 62.4%; Pred. No. 1.7e-14;
Matches 123; Conservative 0; Mismatches 74; Indels
Length 200;
                                                   74; Indels
```

≿ ä ≿ ঠ ≿

```
327 SGMWWISYKCIKIGKKYIGHKSKKIRWICISWRKYMWMSGCWARSMKSWARSWYSWMAC 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          319 AAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCA 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | :| :: :: :: | | :: : | | | :: : | | 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               559 TGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGA 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        513 AAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAC 572
                                                                                                                                                                                                                                                                                                                                               439 CAATITIACAIAGAGITITIAAIGGAICICCAGAAICAGAAACIGAAAGAGIIGAAIGACIG 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTAACAAAAACAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  267 WCMMSASAYRARRSWYGARRSWARAGAGWWRARRGKKRARGKSSWMRSKMSSWRMSAGKA
                                                              333 GAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAA
                                                                                                                                                                              TTTTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAGA
                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                          573 GCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 2.2%; Score 46.2; DB 4; Length 5 Similarity 17.4%; Pred. No. 0.00043; Conservative 131; Mismatches 124; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 15639, Application US/09621976

Patent No. 6639063

GENERAL INFORMATION:
APPLICANT: Under IS
APPLICANT: Under IS
APPLICANT: Glordano, J.Y.
TITLE OF INVENTION ESTE and Encoded Human Proteins.
TITLE OF INVENTION UNDER: US/09/621,976
CURRENT FILING DATE: 2000-07-21
NUMBER OF SEQ ID NOS: 19335

SOFTWARE: Patent.pm

SEQ ID NO 15639

LENGTH: 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619 ACAAGICAGGG 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ARMYGYYRSRS 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-621-976-15639/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Homo EUS-09-621-976-15639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S:
Matches 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           147
                                                                                                           393
                                                                                                                                                                                  453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                          ઠ
                                                                                                                                            g
                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                      셤
                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           213 TITICIAAIGAIGIGGAAGIGGIGAAAGACCAGITICAIACTCAIGAGGGGIACAIGAIGG 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 273 ATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTG 332
                                                        64 GGCTGAACAGGTGAAAGTAAATTCACTAACTCACATGGTGGTCATTGTTGATGAAAACAG 123
                                                                                            TGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC 732
                                                                                                                              124 TGGTGAGAGCGCTACAGCTATCCTAGAAGACCAGTTACAGAAACTTGGTGAGCGCTGGAC 183
                        613 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAATCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
3.6%; Score 76.6; DB 1; Length 7;
Best Local Similarity 6.7%; Pred. No. 8.7e-13;
Matches 28; Conservative 236; Mismatches 155; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                                                                                                                                                                                                                                           APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKNER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
NUMBER OF SEQUENCES: 5.2
CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY & Lardner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
FILING DATE:
                                                                                                                                                                                                                                                                                      Sequence 14, Application US/08232463
Patent No. 5670367
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                               SIREET: 1800 Diagonal Road, S.
CITY: Alexandria
STATE: VA
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IELEX: 899149
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
TUBUTH: 7218 harr
                                                                                                                                                                  733 AAACATCTGTAGATGGA 749
                                                                                                                                                                                                     184 AGCAGTATGCCGTTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29,768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: EP 91
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENY, Stephen A.
REGISTRATION NUMBER: 29,7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   , CLONE: pTZgpt-F1s
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMEDIATE SOURCE
                                                                                                                                                                                                                                                                           IS-08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                            673
```

g ò

ਨੇ

```
NAME/KEY: Misc feature

LOCATION: (195001)...(195000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (195001)...(135000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (155001)...(155000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (155001)...(15000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (165001)...(185000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (165001)...(185000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (165001)...(185000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (165001)...(225000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (125001)...(225000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (125001)...(225000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (285001)...(285000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (285001)...(315000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (285001)...(315000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(315000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(315000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(315000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(380000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(380000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(380000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(380000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(380000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

LOCATION: (385001)...(380000)

OTHER INPORMATION: n=a or or g or t

NAME/KEY: misc feature

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EY: misc feature
ON: (42001)..(435000)
INFORMATION: n=a or c or g or
                n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature
LOCATION: (43501)..(450000)
OTHER INFORMATION: n=a or c
S-09-668-313A-10
Sequence 10, Application US/09668313A
Patent No. 6503756
Patent No. 6503756
Patent No. 6503756
APPLICANT: Brett P. Monia
APPLICANT: Susan M. Freier
APPLICANT: Susan M. Freier
APPLICANT: Susan M. Freier
APPLICANT: Susan M. Freier
APPLICANT: Susan M. Freier
APPLICANT: Susan M. Freier
APPLICANT: Susan M. Freier
CINTENTION: ANTISENSE MODULATION OF SYNTAXIN 4 INTERACTING PROTEIN EXPRESSION
FILE REFERENCE: RTS-0127
CURRENT APPLICATION NUMBER: US/09/668,313A
CURRENT FILING DATE: 2000-09-22
NUMBER OF SEQ ID NOS: 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Griffals, R.
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragments
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragments
TITLE OF INVENTION: and treatment of infection
TITLE OF INVENTION: and treatment of infection
TITLE OF INVENTION: and treatment of infection
CURRENT APPLICATION NUMBER: US/09/198,452A
CURRENT APPLICATION NUMBER: 1998-11-24
NUMBER OF SEQ ID NOS: 6849
LENGTH: 1230025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1613 ACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTGACCTGAATAAT 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1553 TGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1733 TGGGAGGAAGCTTACACAGCAGAATGGAATCAAGTACTTCATCAACCACGTGACACAGACC 1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1793 ACGTCCTGGATCCACCCCGTGATGAGCGCCCTGAACCTGTCCTGTGCAGAAGAAGAAGTGAA 1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 2.1%; Score 44.2; DB 4; Length 2574; Best Local Similarity 54.7%; Pred. No. 0.0056; Matches 88; Conservative 0; Mismatches 73; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1673 GTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAG 1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1853 GAGGACTGTCCCAGAGACTAACAGACCGGAAAAGCTGATG 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY misc feature
LOCATION: (1). [15000)
OTHER INPORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (15001). (3000)
OTHER INPORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (30001). (45000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (30001). (45000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (45001). (60000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (45001). (60000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (45001). (75000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/09198452A Patent No. 6559294 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
ORGANISM: Chlamydia pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (75001)..(90000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; NAME/KEY: CDS
; LOCATION: (218)...(1891)
US-09-668-313A-10
                                                                                                                                                                                                                                                                                                                                                                                         SEO ID NO 10
LENGTH: 2574
TYPE: DNA
ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -09-198-452A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \stackrel{\scriptstyle \leftarrow}{\scriptstyle \circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
```

```
NAME/KEY: misc feature
LOCATION: (55501)..(570000)
OTHER INCORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (57001)..(58500)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (58501)..(60000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (58501)..(60000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (60001)..(61500)
OTHER INFORMATION: n=a or c or g or t
OTHER INFORMATION: n=a or c or g or t
OTHER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/ALI (183001). (64500)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
LOCATION: (64501). (66000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
LOCATION: (66001). (67500)
OTHER INFORMATION: n=a or c or g or t
OTHER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OCTION: (690001)..(705000)

THER INFORMATION: n=a or c or g or t

AME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OCATION: (72001)..(735000)
THER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WAME/KEY: misc feature
LOCATION: (750001)..(765000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (78001)..(795000)

OTHER INFORMATION: n=a or c or g or NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONTINUE (19501) (810000)
THER INFORMATION: n=a or c or g or AME/KEY: misc_feature
NAME/KEY: misc_feature
LOCATION: (465001)...(465000)
DTHER INFORMATION: n=a or c or g or
NAME/KEY: misc_feature
                                                                                          AMANDALIMINA (46501). (48000)

THER INFORMATION: n=a or c or g or AMANDALIME

CAME/KEY: misc feature

CCCATION: (48000). (48500)

THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                       AME/KEY: misc feature
OCATION: (51001)..(525000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                    AME/KEY: misc feature
OCATION: (525001)..(540000)
WHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AME/KEY: misc feature
OCATION: (54001)..(555000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAME/KEY: misc_feature
(61501)..(53000)
THER INFORMATION: n=a or c or g or
AAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COCATION: (675001). (690000)

DIHER INFORMATION: n=a or c or g or AME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATION: (705001)..(720000)

THER INFORMATION: n=a or c or g or AME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OCATION: (73501)..(750000)
                                                                                                                                                                                                                                                        OCATION: (495501)..(510000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (765001)..(780000)
OTHER INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . n=a
(76501)
RMpm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       feature
                                                                                                                                                                                                                                feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AME/KEY: misc
                                                                                                                                                                                                                                                                                                          AME/KEY: misc
```

```
Sequence 1186, Application US/09107532A

Patent No. 6583275

GENERAL INFORMATION:

APPLICANT: Lynn A Doucette-Stamm and David Bush

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO

TITLE OF INVENTION: BY ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          656477 AATTAGAAGAAAGAGAAAGAGAAGAAATTGAGGATATCAAAGACTCAGATACAAAAT 656418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 656358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        342 AATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGAT 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           402 GGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       656357 CAATTAAGCAGAAAAAACTAAAAGCTTCTAAAGAGACGCGCTGGGAAATAGA 656306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2.1%; Score 44; DB 4; Length 1230025; 53.5%; Pred. No. 0.49; Ative 0; Mismatches 80; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 7310
CORRESPONDENCE ADDRESSE: GENOME THERAPEUTICS CORPORATION
STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: PC
OPERATING SYSTEM: «Unknown»
SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,532A
PILING DATE: 30-Jun-1998
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Ariniello, Pamela Deneke
REGISTRATION UMBER: 40,489
REFERENCE TOOCKET NUMBER: GTC-012
TELECOMMUNICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/AGENT INPORMATION:
LOCATION: (810001)..(825000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY misc feature
LOCATION: (82501)..(84000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (840001)..(85500)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (85501)..(87000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
LOCATION: (895001)..(89500)
OTHER INFORMATION: n=a or c or g or t
CCATION: (89501)..(89500)
OTHER INFORMATION: n=a or c or g or t
CCATION: (89501)..(99000)
OTHER INFORMATION: n=a or c or g or t
LOCATION: (89501)..(915000)
OTHER INFORMATION: n=a or c or g or t
CCATION: (89501)..(91500)
OTHER INFORMATION: n=a or c or g or t
CCATION: (890001)..(915000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: Massachusetts
CONNTRY: USA
ZIP: 02354
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 53.5
Matches 92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-107-532A-1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

```
TELEPHONE: (781)893-507
TELEFAX: (781)893-507
TELEFAX: (781)893-8277
TELEFAX: (781)893-8277
SEQUENCE CHARACTERISTICS:
LENGTH: 1179 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
ANTT-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Entercoccus faccium
FEATURE:
NAME/KEY: misc feature
LCCATION: (8) LOCATION: .1179
SEQUENCE DESCRIPTION: SEQ ID NO: 1186:
JS-09-107-532A-1186
```

9

ጵ ጵ

⋩

⋧

g

ጵ ጵ

Search completed: April 5, 2004, 08:25:00 Job time : 105.891 secs

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                            April 5, 2004, 04:53:30 ; Search time 509.455 Seconds (without alignments) 15454.047 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                             1 gagetatgeetacacacagg.......ttetgeatgattetatecaa 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3
Sequence 4
Sequence 1
Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/USO7_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT Time PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/USO6_NEW PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/USO6_NEW PUB.seq:*
5: /cgn2_6/ptodata/2/pubpna/USO7_NEW PUB.seq:*
6: /cgn2_6/ptodata/2/pubpna/USO7_NEW PUB.seq:*
7/cgn2_6/ptodata/2/pubpna/USO8_NEW PUB.seq:*
8: /cgn2_6/ptodata/2/pubpna/USO8_NEW PUB.seq:*
9: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
12: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
13: /cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
19: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-845-416-31
US-01-149-736-40
US-09-845-416-30
US-09-845-416-30
US-09-845-416-39
US-09-845-416-35
US-09-845-416-35
US-09-845-416-35
US-09-845-416-35
US-09-845-416-35
US-09-845-416-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-149-736-39
US-09-845-416-6
US-09-845-416-28
                                                                                                                                                                                                                                                                                                                                                                                                                   stal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                         2470430 segs, 1873665578 residues
                                                                                                                                                                                                US-09-845-416-12_COPY_900_3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                    I nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                       IDENTITY_NUC Gapopt 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                inimum DB seq length: 0 aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2101
2101
1760.4
1750.8
1750.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1743
1743
1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1629
1629
1611.6
1602
                                                                                                                                                                                                                     .tle:
rfect score:
                                                                                                                                                                                                                                                                                                       coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atabase :
                                                                                                                                                                                                                                                                  squence:
                                                                                                                                                                                                                                                                                                                                                                           sarched:
                                                                                                                                 no ur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š.
```

Sequence 34, Appl Sequence 2, Appli Sequence 27, Appl Sequence 4, Appli Sequence 42, Appli	4.7.00	- M 80 M	6334735	3893315 34, 2515
US-09-845-416- US-09-845-416- US-09-845-416- US-09-845-416- US-09-845-416-	0 US-09-845-416-1 5 US-10-149-736-4 5 US-10-149-736-4 US-09-782-378A-2 US-09-880-107-22	S US-10-149-736-2 US-10-342-887-2 US-10-342-887-5 US-10-341-434-6 US-10-149-7416-6 US-10-149-7416-9	0 US-09-845-416-15 0 US-09-845-416-3 0 US-09-845-416-3 0 US-10-149-736-4 US-10-149-736-4 US-10-149-736-3 4 US-10-101-510-68	2 US-10-220-120- 0 US-00-845-416- 0 US-10-149-736- 5 US-10-149-736- 5 US-10-149-736- 10S-10-149-736- 5 US-10-149-736-
990 11 82 11 82 11 12 83 11 11 11 11 11 11 11 11 11 11 11 11 11	0058 1 0057 1 0057 1 957 9	3957 1 4069 1 4082 1 1821 1	11434 111991 11991 11991 11996 11996 1998 1998	1106 12106 12206 1220 1221 1221 1221 122
97.000		uuuuo	. 4	1474864
16 14 14 328	11328.8 13228.8 13288.8 13288.8	2 2 2 2 2 4 4	4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	C4.00.00.00
1111 1180 1080	100000	22222 2222 2022 2022	1	W 4 4 4 4 4 4 O O H C W 4 C

ALIGNMENTS

```
960 ICCTICACAGCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTICATTGATGGAGAG 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1020 idakatinakaccigakiceriaricakacaecritradakakakaratraricergecritriri 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAAGTGGTGAAAGA 240
     Sequence 12, Application US/09845416
Publication No. US20030171312A1
GENERAL INFORMATION:
APPLICANT: XIAO
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
CURRENT PELLOATE
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT PELLOATE: 2001-04-30
PRIOR PPLICATION NUMBER: 60/200,777
PRIOR PPLICATION NUMBER: 60/200,777
PRIOR PELLOATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SEQ ID NOS: 36
SEQ ID NOS: 36
SEQ ID NOS: 36
SEQ ID NOS: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTATACACGAAGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 3510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 2101; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.
Matches 2101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                   ) ORGANISM: Homo sapiens
US-09-845-416-12
                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 3510
TYPE: DNA
US-09-845-416-12
```

ô

ત્ર દ્ર દ્ર

8 % 8 % 8 % 8 % 8

Db 2160 GGGGATCTCCTCATCAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG 2219	OY 1381 CACTITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCGG 1440	OY 1441 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGCAGCTGCATGAAGCCCACAG 1500 2340 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCCAGGCCAGCTCAGCCACAG 2399	QY 1501 GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCCCAGGGTCCCTGGGAGAG 1560	QY 1561 AGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG 1620	Qy 1621 GGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGCTGACTAATAATGTCAGATT 1680 2520 GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATT 2579	OY 1681 CTCAGCTTATAGGACTGCCATGAAACTCCGGAGGACTGCGGAGGCCCTTTGCTTGGATCT 1740 Db 2580 CTCAGCTTATAGGACTGCCATGAAACTCCGGAGAGCTGCAGAAGGCCCTTTGCTTGGATCT 2639	OY 1741 CTTGAGCCTGTCAGCTGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCA 1800 Db 2640 CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCA 2699	Qy 1801 GCCCATGGATATCCTGCAGATTATTAATTGTCTCCACTATTATGACCGCCTGGAGCA 1860	QY 1861 AGAGCACAACTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCT 1920	T 198	QY 1981 CATTTCCCTGTGTAAAGCACATTTGGAAGAACAAGTACAGATACCTTTTCAAGCAAG	z =z	Cy 2101 A 2101 Db 3000 A 3000	RESULT 2 US-09-845-416-31 ; Sequence 31, Application US/09845416 ; Publication No. US20030171312A1 ; GENERAL INFORMATION: ; APPLICANT: XIAO, XIAO ; TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	; TITLE OF INVENTION: THEREOF; ; FILE REFERENCE: DE1142; CURRENT APPLICATION NUMBER: US/09/845,416; CURRENT FILING DATE: 2001-04-30; PRIOR APPLICATION NUMBER: 60/200,777; PRIOR FILING DATE: 2000-04-28; NUMBER OF SEQ ID NOS: 36
	1140 CCAGTTTCATACATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG 1199 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 1200 TAATATTCTACAATTGCGAAGTAAGCTTATTGGAAGAAAATTATAAGAAAATTAAAA 1260	AMINITE CINCENTING SENTANCE 1991 INGONECAS MACHINI CHANGA CANGA AMETICAN CANGA	TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACTTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACTTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACTAAGAGCAATTTAATGAGATTTTTAATGGATCTCCAGAATCAGAAACAAAGCAATTTAATAGAGTTTTTAATGGATCTCCAGAATCAGAAACAAAGCAAAACAAAGCAATTTAATAATAAAAACAAAGCAAATTTAATAGAGTTTTTAATGGAATCTCCAGAATCAGAAAACAAAGCAAAACAAAGCAAAACAAAGCAAAAAAA	GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAAGAA	GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAAGAACAAAAGGTGCTTGA	AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACCTCACATGGTGGTGGTAGT 	TGATGAATCTAGTGGAGATCACGCAACTGCTTGCAAGAAGAAGAACAACTTAGGGTATTGGG	AGATCCATGGGCAAACATCTGTGGACAGAAGACGCTGGGTTCTTTTACAAGACG 780		GAAAGAIGATGAATTAAGCCGCCAGCCCTATTGCAGCCTTTCCAGCAGTTCAGAA 900	GCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAAACTAAAGAACCTGTAATCAT	GAGTACTCTTGAGACTGTACGAATATTCTGACAGACCAGCCTTTGGAAGGACTAGAGAA 102 	1021 ACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCT 1080 	1081 TCTACGAAAGCAGGCTGAGGGGGAAAAATTGAACCTGCACTCCGC 1140 	1201 GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGATCAAGGATCCTGGCAGCCCGT 1260

* % *

ă

ŏ

≿

SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 31		qa :	
LENGTH: 4476 TYPE: DNA ORGANISM: Homo sapiens 3.09-845-416-31		<u></u>	267
Query Match 100.0%; Score 2101; Best Local Similarity 100.0%; Pred. No. 0; Matches 2101; Conservative 0; Mismatches	DB 10, Length 4476;	λ g δ	
1 GAGCTATGCCTACACAGGCTGCTTATGTCACCCCTCTGACCCTACAGGAG	CACCTCTGACCTACACGGAGCCCATT 60	중 점	
61 TCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTTCATIGATCATTIGATCATTIGATCATTIGATCATTIGATCATTIGATCATTIGATCATTIGATCATTIGATCATTIGATCATATICATATIGATCATATIGATCATATICATATIGATCATATIGATCATATICATA	GGAGAG	상 원	1141 IGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTTCCAGGAACTTCAAGAGGCCAC 1200 [
		දු පු	1201 GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT 1260
→ E+-E	GAAAGA 2	& A	1261 GGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAAGTCAAGGCACTTCGAGG 1320
- 0-0		& 42	1321 AGAAATTGCGCCTCTGAAACAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 1380
1859 CAGIIICAIACICAIGAGGGGAAAIGAGGAGAAGAAAAAAAA	TGAAGA 360	රු දු	1381 CACITIGGGCAITCAGCTCICACCGIAIAACCICAGCACTCIGGAAGACCTGAACACCAG 1440
	420	, dg	1441 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG 1500 1041
	480	දු දු	1501 GGACTTTGGTCCAGCATCTCAGCACTTTCCACGCCTGTCCAGGGTCCCTGGAAAG 1560
	GGAAGA 540	y O	1561 AGCCATCTGGCGAAAGAGGCCCTACTATATGAACGAGGACTCAAACAACTTGGTG 1620
2136 GAAGGGTTGAATGACTGGCTAACAAAACGGAAGAAAGAACAAGAAAGGGGAAAATGGGA 541 GCCTCTTGGACCTGATCTTGAAGACTAAAACGCCAAGTACAACAACAACAAAGT	AGAAAGAACAAGGAAAAIGGAGGAAGA 2195 SCCAAGTACAACAACATAAGGTGCTTCA 600 	ර් සි	1621 GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACTGA
	GGTAGT 66	Oy Op	H .
	ATTGGG	oy B	180 345
	AGACAG	දු පු	SACCGCCTGGAGCA 1
	ACAGCT	S ap	AGAGCACAACAATTTGGTCAACGTCCCTCTCTG
841 GAAAGATGAATTAAGCCGGCAGGCACTTATTGGAGGCGACTTTCCAGCAGTTCAGAAAAAAAGATGAATGA	TTGGAGGCGACTTTCCAGCAGTTCAGAA 900 	ਨ 음 전	GARIGITIATOATACGGGACGAACAGGGGGGGATCCGTGTCCTTTTAAAACTGGCAT 363
y gcagaacgatgtacataggccttcaagaggaattgaaaactaaaagctgt	AATTGAAAACTAAAGAACCTGTAATCAT 960	P &	1981 CATTICCTGTGTGTAAGGACATTIGGAAGAAGAGTAAGTAAGATACCTTTTCAAGGAAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGA

1579 GGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGC 1638 541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 600		601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGTGGTGGTAGT 660	70	1759 CAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGATGCAGTCCTGTTACAAAGAG 1818	709 TAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGT 765	TCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCT	1879 CCATTIGGAAGCCAGITCTGACCAGIGGAAGCGICIGCACCITICICIGCAGGAACLICI 1338 826 GGIGIGGCTACAGCTGAAAGAIGAATTAAGCCGGCAGCCACCTATIGGAGGCGACTT 885	GGTGTGCTACAGCTGAAAGATGATTAAGCCGGCAGACCTATTGAAGCCGATTA 19 GGTGTGCTACAGCTAAAGATGAATGAATTAAGCCGGCAGAGAGCCTATTGAAGCCGAGAGAGA	B86 ICCAGGAGITCAGAAAGGAAAGAAGAATAATAAGAAGGATTTAAGAAGGAATTGAAAACTAA 2058 1999 ICCAGGAGITCAGAAGGAAGGAIGIAACAIAAGGGCCITCAAGAGGGAATTGAAAACTAA 2058	946 AGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTT 1005			1066 GAATGICACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATT 1125 	1126 GAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGGGACCCTTGAAAGACTCCAGGA 1185	1186 ACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGGGCCAAGCTGAGGTGATCAAGGG 1245	ATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGT	2359 ATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGT 2418 1306 CAAGGCACTTGGAGAAAATTGCGCCTCTGAAAGAGAAAGGAAAGGTGAGCAGAGGAAGGTGAGCGT 1365	CAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAAAACGTGAGGACGTCAACGTCAATGACCT	1366 TGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGA 1425 1479 TGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGA 2538	1426 AGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCT 1485			2659 GGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACGAGAGA 2718
면 9	d d	ði	8 &	QD	8 6	8 8	중 음	qq	ž 4	કે દ	3 &	3 A	දු දු	& <u>8</u>	કે ક	8 8	요 &	G G	ζς qa	\$ 40 60	70	8 8	7 A
2041 AAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA 2100	3696 AAGTICAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCTTCTGCATGATTCTATCCA 3755	₹—₹	TiT. 3	10-149-736-40 equence 40, Application US/10149736	DOLICATION OS CONTROL DE LA CONTROL DE LA CONTROL INFORMATION: REPLICANT: CHAMBELIAI, Jeffrey S.	REFLICANT: Maiper, SCOCC V. TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences CORRENDED TO MODE OF THE SEPTIMENT OF THE SECOND OF THE	투절표		SOFTWARE: Patentin version 3.1 EQ ID NO 40 LENGTH: 5339	DNA ISM: Artificial Sequen RE:	OTHER INFORMATION: Synthetic 10-149-736-40	3%; Score 1760.4; 3%; Pred. No. 0;	CTACACACAGGCTGCTTATGTCACCACCTTGACCCTACAGGGGGCCCATT 60	1099 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1158 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAG 120	1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGG 1218 121 TGAAGTAACCTGGACCGTTATTAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180	TGAAGTAAACCTGGACGTTATCAAACAGCTTTAGAAAGAA	GGTGAAAGA	241 CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300	TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAGATGAAGA		1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518 421 TAGCATGGAAAAACCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480	1519 TAGCATGGAAAAAGCAATTTACATCATAGATTACTGCAACAGTTCCCCCTGGACCT 1578	481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAAAATGGAGGAAGA 540

Db 1020 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTC 1	181 TGCTGAGGACACATTGCAAGCACAAGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240	8 Qy 241	OY 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAAGAAGATGAAGAGAAGATTATCAGAAGATGAAGA GAAGATTATCAGAAGATGAAGA GAAGAAGATGAAAGATTATCAGAAGATGAAGA GAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAG	45 Qy 361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 58 Db 1260 AACTGAAGTACAAGAGGAGTGAATCTCCTAAATTCAAGATGGCAATGCCTCAGAGTAGCAAGAGATACAAGAGAGATACAAGAGAGATACAAGAGAGATACAAGAGATACAAGAGAGATACAAGAGAGATACAAGAGAATACAAGAATCCAAAATTCAAGATGGCAAATGCAAGATACAAGAGATACAAGAGATACAAGAATACAAGATACAAGAATACAAGAATACAAGATACAAGAATACAAAAAAAA	421 TAGCATGGAAAAAAAAGAATTTACATAGAGTTTTAATGGATCTCCAGAATCA	965 Qy 475 GAAACTGAAAAGTTGAATGACTAACAAAAACAGAAAGAAGAACAAGAAAATGGAAAATGGAAAATGGAAAATGGAAAATGGAAAATGGAAAATGGAAAATGGAAAATGGAAAAGAACTAACT		595 GCTTCAAGAAGATCTAGAACAAGACAAGATCAAGGTCAATTCTCTCACCACATGGTGGT 1500 ACAATGGCAAGACCTGAAGGTGAAATTAAAGCTCACAAGATGTTATCACAACCTGGA	15 655 15 655	Qy 703 ACAACTTAAGGTATTGGGAGATGGGCAAACATCTGTAGATGGACAGAGGCG 	QY 760 CIGGGTTCTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGA 819 DD 1680 TAGGTCCCATTTGGAAGCCAGTTCTGAAGCGTCTGCACCTTTCTCTGCAGGA 173	OY 820 ACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGGAGGCACCTATTGGAGG 879	QY 880 CGACTITCCAGCAGITCAGAACGAGAACGATGTACATAGGCCTTCAAGAGGGAATTGAA	QY 940 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAAGA	Oy 1000 GCCTTTGGAAGGACTAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGG 105	2) QY 1060 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTAGGAG 60 Db 1980 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGTGAGGAGGTCAATACTGAGTAGGA	227 DY 1120 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 120 Db 2040 AAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAAAAAA	
	1606 TCAAACAACTTGGTGGGACCATCCCAAAATGACGGCCTCTACCAGTCTTTAGCTGACCT 160 2719 TCAAACAACTTGGTGGGACCATCCCAAAATGACAGGGGTCTTACCTGACGACCT 27	. 1666 GAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAGGACTGCAGAAGGC 172	1726 CCTTTGCTTGGATCTTTGAGCCTGTCGGCTGGCATGTGATGCCTTGGACCAGCACAACCT 178	1786 CAACCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGATTG	. 1846 TGACCGCCTGGAGCAGAAGCAACAATTGGTCAACGTCCCTCTGCGTGGATATGTG 19.		1966 TITTAAAACHGGCAICAITICCCIGIGIAAAGCACATIIGGAAGACAAGTACAGATACCT 20:	2026 TITCAAGCAAGTGGCAAGTTCAACAGAATTTGTGACCAGGCGGGGGGCGCCCTTCT 20. 3139 TITCAAGCAAGTGGCAAGTTCAAGGATTTTGTGACCAGGCAAGGCAGGC	, 2086 GCATGATICTATCCAA 2101 	SSULT 4 5-09-845-416-10 Sequence 10, Application US/09945416	Publication No. US20030171312A1 GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	TITLE OF INVENTION: THEREOF FILE REFERENCE: DE1142 CURRENT APPLICATION VIMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30	PRIOR APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 32 SOFTWARE: PAtentin Ver. 2.1	d w & £	core 1750.8; DB 10; Length 3531;	CONSERVATIVE 0; MIBMATCHES 187; INGELS 21; GADS AGCTATGCCTACACACACACACTCTCACCCTACACACACA		CACACCE ACCEPTACE CACACCE ACCEPTACE CONTROL OF THE

```
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SSOFWARE: PatentIn Ver. 2.1
SEQ ID NO 30
LENGTH: 4498
                                                                                                                                 83.3%;
larity 90.2%;
Conservative
                                                                                       ORGANISM: Homo sapiens
US-09-845-416-30
                                                                                                                                                Similarity
                                                                                                                                   Query Match
Best Local Simi
Matches 1914;
                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                      1777
                                                                                                                                                                                                                                                                                                                                                                         1837
                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      535
                                                                                TYPE: DNA
                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                              \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       상임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               දු පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                   ď
                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2999
                                                                                                                                                                                                                                                       2459
                                                                                                                                                                                                                                                                                 1599
                                                                                                                                                                                                                                                                                                         2519
                                                                                                                                                                                                                                                                                                                                                              2579
                                                                                                                                                                                                                                                                                                                                                                                        1719
                                                                                                                                                                                                                                                                                                                                                                                                                                           1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAACCTCAAGCAAAATGACCAGGCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                           2219
                                                                     1359
                                                                                              2279
                                                                                                                        1419
                                                                                                                                                 2339
                                                                                                                                                                          1479
                                                                                                                                                                                                    2399
                                                                                                                                                                                                                               1539
                                                                                                                                                                                                                                                                                                                                    CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 1659
                                                                                                                                                                                                                                                                                                                                                                                                                rgaccrgaaraarcrcagarrcrcagcrraragaacrgccargaaacrccgaagacrgca 2639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATITATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA 1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATITIATGACCGCCTGGAGCAAAAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA 2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACCTCAAGCAAAATGACCAGGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGTGTCTGAACTGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                              2220 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGACGTGAGCCCACGTCAA
                                                                                                                                                                            TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                           CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGGTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGGCCCTTTGCTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                   CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                   GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                        TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                 S-09-845-416-30
Sequence 30, Application US/09845416
Sequence 30, Application US/09845416
Sequence 30, Application US/09845416
Seneral Information:
General Information:
APPLICANT: XAO, XAO,
TITLE OF INVENTION: DAM SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: DAM SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: THEREOF FILE SEPERENCE: DAM SECURENT APPLICATION NUMBER: US/09/845,416
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cerrerechicaricrarecha 3021
                                           2160
                                                                      1300
                                                                                                                                                                                                       2340
                                                                                                                                                                                                                                1480
                                                                                                                                                                                                                                                                                                                                       1600
                                                                                                                                                                                                                                                                                                                                                                2520
                                                                                                                                                                                                                                                                                                                                                                                                                   2580
                                                                                                                                                                                                                                                                                                                                                                                                                                              1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3000
                   1240
                                                                                                                         1360
                                                                                                                                                                            1420
                                                                                                                                                                                                                                                                                    1540
                                                                                                                                                                                                                                                                                                                                                                                           1660
```

```
2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2556
                                                                                                                 1716
                                                                                                                                                                                                                                                                          1836
                                                                                                                                                                                                                                                                                                                                                        1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2496
                                                                                                                                                                                            1776
                                                                                                                                                                                                                                                                                                                                                                                                                                 1956
                                       m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           879
                                                                                                                                                         120
                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAAAAAGCAATTTACATAGAGTT-----TTAATGGATCTCCAGAATCA 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           819
                                                                             09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2137 gałachigałaładrincniechigechiachadadadadadadachachangrenach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2257 ACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                703 ACAACTIAAGG ---TATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L897 CCAGTITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1957 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2077 TAGCATGGAAAAACAAAGCAATTTACATAGAACTCATAGATTACTGCAACAGTTCCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAAAAAAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2197 deligenacecenaageanagecheenagaaeneeaaggaahaaaagaceaagaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2317 TGAAAACAGCCAAAAAATCCTGAGATCCTGGAAGGTTCCGATGATGCAGTCCTGTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       820 ACTICIGGIGIGGGIACAGCIGAAAGAIGAIGAATIAAAGCCGGCAGGCACCIATIGGAGG
                                                                         1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTTGACCCTACACGGAGCCCATT
                                                                                                               1657 GAGCTATGCCTACACAGGCTGCTTATGTCACCTCTGCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2017 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2377 AAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACAT
                                                                                                                                                                                                                                                                                                                                                   recreageacacatrecaageacacaagagagarrrcraargargagaggegaaga
                                                                                                                                                                                                                                                                                                                                                                                               CCAGITICATACICATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      655 GGTAG-----TTGATGATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              760 CTGGGTTCTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGA
                                                                                                                                                                                                                                      TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                  TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                         Gaps
      Length 4498;
Score 1750.8; DB 10; Lengt
Pred. No. 0;
0; Mismatches 187; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 중 음
```

OY 1960 CCTGTCTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACTTTGGAAGACAAGTACAG 2019 Db 3637 CCTGTCTTTTAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 3696 OY 2020 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCAGG	RESULT 6 US-09-845-416-9 IS Sequence 9, Application US/09845416 Sequence 9, Application No. US20030171312A1 GENERAL INPORMATION: APPLICANT: XIAO	PRIOR APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1 SOFTWARE: Patentin Ver. 2.1 LENOTH: 3858 TYPE: DNA ORGANISM: Homo sapiens US-09-845-416-9	Query Match Best Local Similarity 85.8%; Pred. No. 0; Best Local Similarity 85.8%; Pred. No. 0; Matches 2101; Conservative 0; Mismatches 0; Indels 348; Gaps 1; Qy	121 TGATAAACAGCTTATCAAACACCTTATCAAAAAAAGAGTTATTAGCAGTTCATTAGTGGAGAGAGA	181 TGCTGAGGACACTTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1080 TGCTGAGGACATTGCAAGCACAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 241 CCAGTTTCATACTGATGAGGGGTACATGGATTTGAAGACCCATCAGGCCCGCGTTGG 1140 CCAGTTTCATACTGATGAGGGGTACATGATGGATTTGAAGGCCCATCAGGCCCGCGTTGG 1140 CCAGTTTCATACTCATGATGATGATTTGAAGGCCCATCAGGCCCGGCTTGG	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAACATTATCAGAAGATGAAGA 1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 361 AACTGAAGAGCAGATGAATCTCCTAAATTCAAGATGGAATGCCTCAGGGTAGC 1200 AACTGAAGTACAAATGAATTCTCCTAAATTCAAGATGGGAATGCTCAGGGTAGG	421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1320 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1321 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 481 GAAAGAGTTGAATGGCTAACAAAAACAGAAGAAAAAAGAAAATGGAGAAAA 1380 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAAAA
		CAAGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTGGA [1360 TGACCTTGCTGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGCA 1419	1480 GCAGCTGCATGAAGCCCACAGGACTTTGGTCCAGCATCTTCCACGTC 1539	1600 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGC 1659	1720 GAAGGCCCTTTGCTTGGATCCCTTGAGCCTGCAGCTGCATGTGATGCCTTGGACCAGCA 1779	1840 TAITTATGACCGCTGGAGCAAGAGCACAATTTGGTCAACGTCCTTCTGCGTGGA 1899 3517 TAITTATGACCGCTGGAGCAGAGCACAACAATTTGGTCAACGTCCTTCTGCGTGGA 1876 1900 TAITTATGACTGGTGGTGCTGCAATTTATATATAGACGACGAACAAGAGGGGGAGGATCGTGT 1959 1577 TAIGTGTCTGAACTGGTGCTGCTGAATGTTATGATACGGACGAACGA

Qy 1273 CATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 1332	OY 1333 TCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 1392	Oy 1393 TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACAGATGGAAGCTTCT 1452	Oy 1453 GCAGGTGGCCGTCGAGGACCGAGTGCAGCAGCTGAAGCCCACAGGGACTTTGGTCC 1512	Qy 1513 AGCATCTCAGGACTTTCTTTCCACGTCTGTCCAGGGTCCCTCGGAGAGAGA	Qy 1573 AAACAAAGIGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA 1632 Db 2820 AAACAAAGTGCCCTACTATTATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA 2879	OY 1633 AATGACAGAGCTCTACCAGTCTTTAGCTGACTGAATAATGTCAGATTCTCAGCTTATAG 1692	1693	1753 AGCTGCCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCAGCCCATGGATAT 181	AGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCAGCCCATGGATAT 305 CCTGCAGATTATTAATTGTTTGACCACTATTATGACCGCCTGGAGCAAAAGAGCACAACAA 187	Db 3060 CCTGCAGATTATTAATTGTTGACCACTATTATGACCGCCTGGAGCAGAGAGACAACAA 3119 Oy 1873 TTTGGTCAACGTCCCTCTGCGTGAATATGTGTCTGAACTGGCTGCTGAATGTTTATGA 1932	Db 3120 TITGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCTGATGTTTATGA 3179 Ov 1933 TACGGGACGAACAGGGAGGATCCGTGTCCTGTTCTTTAAAACTGGCATCATTTCCCTGTG 1992	3180 TACGGGACGAACAAGGAACCTGTCCTGTCTTTTAAACTGGCATCATTTCCCTGTG 32	1993 TAAAGCACATTTGGAACACAAGTACAGATACCTTTTCAAGCAAG	OY 2053 ATTTTGTGACCAGGGCAGGCCTCCTTCTGCATGATCTATCCAA 2101 Db 3300 ATTTGTGACCAGGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 3348	RESULT 7 US-09-B45-416-29 Sequence 29, Application US/09845416 Publication No. US20030171312A1	GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: THEREOP	FILE REFERENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30 PRIOR APPLICATION NUMBER: 60/200,777	PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 29
541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 600	AGAAGATCTAGAACAAGAAGACCTAAAACCAAGATCCACATCAACAACAAGATCTAGAAGATCTAGAAGAACAAGAAGATCAGAGAGATGATAGTAGATAGTAGATAGTAGATAGTAGATAGTAG	AGAAGATCTAGAAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	TGATGARICTAGTGGGAATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 161 AGATCGATGGGCAAACATCTGTAGATGGACAGAGACGCTGGGTTCTTTACAAGA 777	AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGGTCFTTTACAAGACAC Lb/	1680 TCATAGATTACTGCAACAGTTCCCCCTGGAAAAGTTTCTTGCCTGGCTTACAA 1739	1740 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGA 1799 778	1800 CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACTCCAAGGTGAAATTGAAGC 1859 778 777	1860 TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCTGGGA 1919 778 777	1920 AGGITCCGAIGAGGAGTCCIGITACAAAGACGITTGGAIAACAIGAACTICAAGIGGAG 1979		793 GAAGGGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGGTGAAAGATGATGA 852 	853 ATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT 912 2100 ATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT 2159		GACTGTACGAATATTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTC 	1033 GCCCAGAGAGCTGCCTCCTGAGGAGAGACCCAGAATGTCACTCGGCTTCTACGAAAGCA 1092 	1093 GGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTGACTG	1153 AAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 1212 	1213 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCACCCGTGGGCGATCTCCT 1272

ጵ ዳ

≿ 8

ጵ ጵ ጵ

8 % 8

8 5 8 5 8 5 8 5

LENGTH: 4825	٨٥	778 777
TYPE: DNA ORGANISM: Homo sapiens	qq	2617 ICACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA 2676
	ò	777
core 1743; DB 10; Length 4825; red. No. 0;	qq	2677 AGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAG 2736
Matches 2101	ò	778CAGTICTGACCAGIG 792
GACTATGCCTACACACACGCTGCTTATGCTCACCACCTTCACACCCTACACGCCCATT	qū	TGAACTICGGAAAAAGTCTCTCAACAITAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAY	δ 6	793 GAAGGGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTAAACAACTGAAAGATGATGA 852
) 1717 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAGTCATTTGGCAGTTCATTGATGGAGAG 1776 , 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAAAAGAAGTATTATGGTGGCTTCTTTC 180	λ	AITAAGCCGGCAGGACCTATIGGAGGCGACTITCCAGCAGTTCAGAAGCAAGGAACGAIGT 912
TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGGC	ପ୍ର (
181 TGCTGAGGACACATTGCAAGGAGAGATTTCTAATGATGAGGAGAGAGA		913 ACATAGGGCCTTCAAGAGGGGAATTGAAAACTAAGAACCTGTAATCATGAGTGCTTTTGA 2976
GGTTGG 300	oy Ob	973 GACIGIACGAATAITICTGACAGAGCAGCCTITGGAAGGACTAGAGAAACTCTACCAGGA 1032
1897	λō	GCCCAGAGAGCTGCCTCCTGAGGAGAGGCCCAGAATGTCACTCGGCTTCTACGAAAGGA
TANTO TO THE CONTROL OF THE CONTROL	qc	GCCCAGAGAGCTGCCTCCTGAGGAGGGCCCAGAATGTCACTCGGCTTCTACGAAAGCA
361 PACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC	ço da	1093 GGCTGAGGAGGTCAATACTGAGTGAGAAAATTGAACCTGCACTCCGCTGACTGGCAGAG 1152
b 2017 AACTGAAGTACAAGAGCAATGAATCTCCTAAATTCAAGATGAGSAATGCCTCAGGGTAGC 2076 y 421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480	ر م	1153 AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 1212
b 2077 TAGCATAGAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 2136	3 8 	
y 481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAGA	. qa	CCTCAAGCTGCGCCAAGCTGAGGGATCAAGGGATCCTGGCAGCCGGTGGGCGATCTCCT
541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA	oy G	1273 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 1332
b 2197 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCGAAGTACAACAACATGGTGCTTCA 2256 y 601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	λο .	1333 TCTGAAAGAGAGGTGAGCCACGTCAATGACCTTGGTCGCCAGCTTACCACTTTGGGCAT 1392
= ₹	<u> </u>	145
y 661 TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 720	් දි	TCAGCTCTCACCGTATAACCTCAGGACTGGAAGACCTGAACACCGGGAGGCTTCT 345
AGATGATGGGGAACATCTGTAGATGGACAGAGACCCCTGGGTTCTTTACAAGA	λ α	1453 GCAGGTGGCCGTCCAGGACTCAGGCAGCTGCATGAAGCCCACAGGACTTTGGTCC 1512
2377 AGATCGATGGGCAAACATCTGTAGATGGACAGAA	ò	7
y 778	셤	
	상 점	1573 AAACAAAGTGCCCTACTATATCAACCACGAGACTLAAACAACTTGCTGGGGACCATCCAA 1882
8	λ	
y //8	qa	AATGACAGAGCTCTACCAGTCTTTAGCTGACTGAATAATGTCAGATTCTCAGCTTATAGA
	ζŏ	1693 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 1752

3697 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 3756	λ ο ο	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
1753 AGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAATGACCAGCCCATGGATAT 1812	8 6	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 2040 AACTGAAGTACAAGAAGAGAATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 2099
B 1813 CCTGCAGATTATTAATTGACCACTATTATGACCGCCTGGAGCAGAGCACAACAA 1872	ે ઠ ક	TAGENTGGAAAAACAAAGCAATTTACATAGATTTTAATGGATCTCCAGAATCAGAAACT TAGCATCAAAAACAAAAGCAATTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACT
y 1873 TITGGICAACGICCCTCTGCGIGGATATGIGICTGAACTGGCIGCTGAATGITTATGA 1932	3 & 8	Garagagttgaatgactgggtgactaactaatagagagaagaagaagaagaagaagaagaagaagaag
TTTAAAACTGGCATCATTTCCCTGTG 	3 & a	
y 1993 Tabagcacatttggaagacaagtacagataccttttcaagcaag		601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA
y 2053 ATTITGIGACGGGGGGCGGCCTCCTTCTGCATGATTCTATCCAA 2101	۸۵ م	
IESULT B 1S-09-845-416-35 Sequence 35, Application US/09845416	8 S	721 AGATGGATGGGGAAAGATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGA 777 [
Publication No. US20030171312A1 GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: DAS SECIENCE FUNDING A DYSTROBHY MINIGENE AND USE	& €	778
	ò	
CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30	QO	2520 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGA 2579
FRION AFFICATION NOMED . 00/200/// PRION FILING DATE: 2000-04-28	ò	777
; NOMBEK OF SEQ ID NOS: 30 ; SOFTHARE: Patentin Ver. 2.1 <pre>cro ID NO 35</pre>	ପ୍	2580 CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 2639
TYPE DAY	ò 6	778
: ORGANISM: Homo saplens JS-09-845-416-35	3 8 	
0%; Score 1743; DB 10; Length 4848; 8%; Pred, No. 0;	qa	2700 AGGITCCGALGAIGCAGICCTGTTACAAAGACGITTGGATAACAIGAACTTCAAGTGGAAG 2759
Matches 2101; Conservative 0; Mismatches 0; Indeis 348; Gaps 1; 2y 1 GAGCTATGCCTACACAGGCTGCTTATGTCACCCACCTTGACCCTACACGGAGCCCATT 60	کن در 	778CACTTCTGACCACTG 792
GCCCALT	~	
2) 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGG 120 3. 3. 3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	qa	
TCLITCACAGCAITIGGAAGCICCIGAAGACAAGICAIIGGGAAGICAIIGGAAGAAGAAGAAGAAAAAAAA	λδ .	853 ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGAIGT 912
1800	δ	913 ACATAGGGCTTCAAGAGGGAATTGAAAACTAAAGAACTGTAATCATGAGTACTCTTGA 972
TGCTGAGGACACATTGCAAGGACAAGGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA	4 E	2940 ACAIAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATGATGAGTACTCTTGA 2999 973 GACTGTACGAATATTTCTGACAGAGGGGGCGCTTTGGAAGGACTAGAAACTCTACCAGGA 1032
241 CCAGITICAIACTCAIGAGGGTACAIGAITHGACAGCCCAICAGGCCCGGGTIGG	ठ वे	3000 GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGA 3059
1920 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG 1979	~. 	1033 GCCCAGAGAGCTGCCTCGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1092

US-09-845-416-36 ; Sequence 36, Application US/09845416 ; Publication No. US20030171312A1 ; Publication No. US20030171312A1 ; Publication No. US20030171312A1 ; APPLICANT XIAO, XIAO ; TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE ; TITLE OF INVENTION: THEREOF ; TITLE PEPRENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416 ; CURRENT FILING DATE: 2001-04-28 ; NUMBER OF SEQ ID NOS: 36 ; SOFTWARE: Patentin Ver. 2.1 ; SEQ ID NO 36 ; LENGTH: 5060 ; TYRE: DNA ; CRANISM: Homo sapiens US-09-845-416-36	Query Match 83.0%; Score 1743; DB 10; Length 5060; Best Local Similarity 85.8%; Pred. No. 0; Matches 2101; Conservative 0; Mismatches 0; Indels 348; Gaps 1; Qy 1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTCACCGCACCCATT 60 Db 1892 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCCTCTCACGGAGCCCATT 1951 Qy 1 TCCTTCACACACTTTTAGAAGCTCATTAGAAGTCATTTGCAGGAGG 2011 Qy 121 TGAAGTAAACCTGGACGTTATCAAACAGCTTTTAGAAGAAGTCATTTAGAGGAGG 2011 Qy 121 TGAAGTAAACCTGGACGTTATCAAACAGCTTTTAGAAGAAGTCTTTCTT	241 CCAGTTTCATACTCATGAGGGGTACATGAGGATTTGACAGCCCATCAGGGCCGGGTTGG 2132 CCAGTTTCATACTCATGAGGGGTACATGATGGAATTTGACAGCCCATCAGGGCCGGGGTTGG 301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA 2192 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGGAAATTATCAGAAGATGAAGA 361 AACTGAAGTACAAGGCAAGTAACCTGATTGGAACAGGGAAATTATCAGAAGATGAAGA 362 AACTGAAGTACAAAGCAAGTAACCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 421 TAGCATGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Db 2372 GAAGGGTTGAATGGCTAACAAAACGAAGGAAATGGAGGAAATGGAGGAAGGA
	13.33 TCTGAAAGAAGATGAACGACGAATGACCTTGCCCGACCTTACCACTTTTGGCCAT 13.92	AATGACAGAACTCTACCAGTCTTTAGCTGAACTACTTGCTTG	1933 TACGGGACGAACAGGGATCCGTGTCTTTTAAAACTGGCATCATTTCCTGTG

SOLT 9

Db 3692 GCAGGTGGCCGTCGAGGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC 3751	Qy 1693 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCTTTGCTTGGATCTCTTGAGCCTGTC 1752 Db 3932 GACTGCCATGAAACTCCGAAGAAGGCCTTTGCTTTGCTT	TACGGGACGAACAGGGAGGATCCGTGTCTTTTAAAACTGGCATCATTTCCCTGTG TACGGGACGAACAGGAGGATCCGTGTCTTTTTAAAACTGGCATCATTTCCCTGTG TAAAGCACAATTTGGAAGACAAGTACATCTTTTTTTAAACTGGCATCATTTCCCTGTG TAAAGCACATTTGGAAGACAAGTACAATACCTTTTCAAGCAAG	RESULT 10 US-09-845-416-32 Sequence 32, Application US/09845416 Publication No. US20030171312A1 GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: DAS SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: THEREOF TITLE REFERENCE: DE1142 CURRENT FILING DATE: 2001-04-30 PRIOR APPLICATION NUMBER: US/09/845,416 PRIOR APPLICATION NUMBER: 60/200,777 PRIOR PLILNG DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 32 LENGTH: 4414	17.54 17.55 17.54 17.55 17.54 17.55 17.5
	TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGA AGGTTCCGATGATGACGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCTGACAGGAG TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG GAAGCGTCTGCACCATTTCTCTGGAGGAACTTCTGGTGGTGGCCAGTACAGCTGAAAGATGATGA	3032 GAAGCGTCTGCACCTTTCTCTGCAAACTTCTGGTGTGGCTACAAAGATGATGA 3091 853 ATTAAGCCGGCAGCACCTATTGCAGGCGACTTCCAGCAGTTCAGAAGATGATGA 3091 853 ATTAAGCCGGCAGCACCTATTGCAGGCGACTTTCCAGCAGTTCAGAAGCACATGT 912 3092 ATTAAGCCGGCAGCCTATTGCAGGCGACTTTCCAGCAGTTCAGAACGATGT 3151 913 ACATAAGCCGACCTTCAAGAGGCAATTGAAAACTAAAGAACCTGTAATCATGATGATTCTTTTGA 972 913 ACATAGGGCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGATACTTTTTTTT	1033 GCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1092	3512 CATTGALGACTCCCCAAGATCACCTCGAAAAGTCAAGCACTTCGAGAAATTGGGCC 3571 1333 TCTGAAAGAACGTGAGCCACGTCAAGACCTCGCCACCTTACCACTTTGGGCT 1392

2744AAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC 279	1201 GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT 126 [1 GGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG 13 	1321 AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 138:	1381 CACTITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGGAACACCGG 144 [1441 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAG 150 1034 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGCTGAGGCAGCTGCATGAAGCCCACAG 309	1501 GGACTTTGGICCAGCAICTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG 1560	1561 AGCCATCTCGCCAAACAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG 1620	1621 GGACCATCCCAAAIGACAGAGCTCIACCAGTCTITAGCTGACCTGAATAATGTCAGATT 168(1681 CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT 1740	1741 CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACACCTCAAGCAAATGACCA 1800	1801 GCCCAIGGATAICCIGCAGAITATTAAITGITIGACCACTAITTAIGACCGCCTGGAGCA 186. 3394 GCCCAIGGAIAICCIGCAGAITAITAAITGITIGACCACTAITIAIGACCGCCIGGAGCA 345.	1861 AGAGCACAACAAITIGGICAACGICCCTCTCTGCGIGGAIAIGIGICTGAACTGGCTGCT 1920 [GAAIGTTTATATATACGGGACGAACAGGGAGGATCGGTGTCCTGTCTTTTAAAACTGGCAT 198 	1981 CATITCCCIGTGTRAAGCACAITTGGAAGACAAGTACAGAIACCTITTCAAGCAAGTGGC 204	2041 AAGITCAACAGGATTITGIGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA 2100	2101 A 2101 3694 A 3694	RESULT 11 US-09-845-416-14 ; Sequence 14, Application US/09845416 ; Publication No. US20030171312A1 ; GENERAL INFORMATION: ; APPLICANT: XIAO	
쉽	λ G	ठ व	Qy Dp	QY DP	λό q	장 ^엄	8 &	ර යි	ර යි	S S	& 음 ·	රු පු	ර් සි	පි සි	중 음	දු පු	RESUUS - OUS	
						·						•					· .	
	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180 	181 TGCTGAGGACACATTGCAAGCACAAAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240 	241 CCAGITICATACTCATGAGGGTACAIGATGGATITIGACAGCCCATCAGGGCCGGGTTTGG 300 	ω α	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 2017 AACTGAAGTACAAGAGCAGATGAATCCTAAAATTCAAGATGGGAATGCCTCAGGGTAGC 2076	421 TAGCATGGAAAACAAAGGAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 480 		GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAAAAGGTGCTTCA 600 	AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGTGGTGGTGGT 	TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAGAGACAACTTAAGGTATTGGG 720 	AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG	781 TICTGACCAGTGAAGGGTCTGCACCTTTCTGCAGGAACTTCTGGTGGCTACAGCT 840 2437 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTCAGA 2496	841 GAAAGATGAAGTAAAGCCGGCAGGCACCTATTGGAGGGGACTTTCCAGCAGTTCAGAA 900 2497 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 2556	901 GCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCAT 960 2557 ATCAAGTCTTCAAAAACTGGCGTTTTAAAAGGGGATCTAGAAAAAGAAAAAAGCAATCCAT 2616	961 GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCGCCTTTGGAAGGACTAGAGA 1020 	ACTCTACCAGAGACCCAGAGAGCTCCTCCTGAGGAGAGAGCCCAGAATGTCACCGCT 10	1081 TCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACTGCACTCCGC 1140	

```
1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2635
                                                                                                                                                                                                                                                                                                                                                                                                                            1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2755
                                                                                                                                                                                                                                                                                  1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2035
  1679 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1738
                                                                                                                                                                                                                                                                             GGGCAAACTGTA-------TTCACTCAAACAAGATCTTCTTTCAACACAGA
                                                                                                                                                                                                                                     GAGTACTCTTGAGACTGTACGAATATTTTCTGACAGCAGCATTTGGAAGGACTAGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCGGAAGACCTGAACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cacititigoscatiticascificates con caracteras caretras de asacteras cacas caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras caracteras carac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGACTTTGGTCCAGCATCTCAGCACTTTCCACGACGTCCAGGGTCCAGGGTCCTTGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> deaccateccaaatgacagagciciaccagiciitagcigaccigaataatgicagaii</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crigasecrerendenerandianecringasecasecasecreasecaaandaeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGATATGTGTCTGAACTGGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
                                                                                            1739 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                           901 GCAGAACGAIGIACAIAGGGCCIICAAGAGGGAAIIGAAAACIAAAGAACCIGIAAICAI
                                                                                                                                                                                      ACTICTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAATGTCACTCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                         1081 TCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -------AAGAGTACAGCACAGACCCTTGAAAGACTCCAGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               geargageregaeereaageregeeraagereaagereareareaagaareeregeeere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCGATCTCCTCATTGACTGTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       geecearcrecrearneaercrerecaaearcaecreeaeaaaercaaeecerreeaee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u> AGCCATCTCGCCAAACAAAGTGCCCTACTATCAACCACGAGACTCAAACAACTTGCTG</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTGACCTGAATAATGTCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----TAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAACTTGAA------
                                                                                                                                                                                                                                                                                                                                                                               AATAAGTCAGTGACCAGAAGACGGAAGCATGGCTGGA------
                                                    841
                                                                                                                                                                                        1799
                                                                                                                                                                                                                                                                                       1859
                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                 1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2336
                                                                                                                                                                                                                                          961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                    8 y 8
                                                                                                                                                                                                                         8 B 8
                                                                                                                                                                                                                                                                                                                                                                  6 6 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                     ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAGAGGGAGATGAGATCTCCTAAATTCAAGATGGGGAATGCCTCAGGGTAGC 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1439 GCCTCTTGGACCTGATCTTGAGGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .619 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGATGAATCTAGTGGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TICTGACCAGIGGAAGCGICIGCACCTITCICTGCAGGAACTICTGGIGTGGCTACAGCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGTITCATACTCATGAGGGGTACATGATGATTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .080 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: THEREOF FILE REPERENCE: DEILARD.

FILE REPERENCE: DEILAGE.

CURRENT APPLICATION NUMBER: US/09/845,416

CURRENT PILING DATE: 2001-04-38

PRIOR PILING DATE: 2000-04-28

NUMBER OF SEQ ID NOS: 36

SOFTWARE: PATENTIN Ver. 2.1

SEQ ID NO 14

LENGTH: 3446

TYPE: DNA

CREANISM: Homo sapiens

IS-09-845-416-14
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
         USE
                                                                                                                                                                                                                                                                                                                                                                                                          64;
                                                                                                                                                                                                                                                                                                                                                             Length 3446;
                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                        Score 1629; DB 10;
Pred. No. 0;
0; Mismatches 190;
                                                                                                                                                                                                                                                                                                                                                        77.5%;
ilarity 87.9%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Simil
Matches 1847; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
```

Ü

≽

ō

>

ă ≈ ત્ર ⋩ ક્ષ ⋩ പ്പ ⋩ g ⋩ 유 ⋩

⋩

≿

Db 1459 AACTGAAGTACAAGAGCAGTGAATTCCTAAATTCAAGATGCGCTCAGGGTAGC 1518 Qy 421 TAGCATGGAAAACAAAGCAATTTACATAGATGGATTC	1699 CCTGGALAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGA 538 AGAGCCTCTTGGACTGATCTTGAAGACTGAAAGCTGAAACAACTGCCAATGTCCTACAGGA 538 TCAAGAAGATTTCTTGCCTGGCTTACAGAAGCTCAAGGGAGTAAAAGATGTCTTAAAGAACTGCTAAGAAGTGCT 538 TCAAGAAGATCTAGAACAAGAAGAGCTCAAGGGAGTAAAAGAAGTGTTATAAAAGAACTGGAATGAACAAGAAGATTGAAGAACTCAAGAAGAACTTCTCACTCA	2119 943 2119 1003 2239 1123 1123 1183 1183 12419 12419 12419
1921 GAAIGITTAIGATACGGGACGAACAGGGAGGATCCGTGTCTTTTAAAACTGGCAT 1980	736-41 -736-41 -736-41 -736-41 -736-41 -736-41 -736-41 -736-41 -736-73	OTHER TROUBLAND. Synthetic S-10-149-736-41 Query Match Bust Local Similarity 85.4%; Pred. No. 0; Bust Local Similarity 85.4%; Pred. No. 0; Matches 1911; Conservative 0; Mismatches 190; Indels 138; Gaps 3; Matches 1911; Conservative 0; Mismatches 190; Indels 138; Gaps 3; 1 GAGCTATGCCTACACACGCTCTTATGTCACCCCTCTCACGCAGACCCATT 1158 1 1099 GAGCTTTGCACACACGCTTATGTCACCCCTCTCACCCACACGAGACCCATT 1158 1 1159 TCCTTCACAGACTTTGGAAGCTCTTATGTCACTTTTATTCATGAGACCCATT 1158 1 1159 TCCTTCACAGACTTTGGAAGCTCCTGAACACTTTTGCAGAGTCATTTGTATGAGAGAG 1218 1 1159 TCCTTCACAGACTTTGGAAGCTCCTGAACACATTTGGCAGTTCATTGATGAGAGAG 1218 1 1159 TCCTTCACAGACTTTGCAAGACACATTTGAAGAAGTATTATCGTGGCTTCTTTC 180 1 1159 TCCTTCACAGACTTATATATCAAACAGATTTTTTCAATGATTTTTCTTTTC 1278 1 1159 TCCTTCACAGACTTATCAAACAGAGAGAATTATCATGAAGATTTTTTCTTTTTTCTTTTTTTCTTTTTTTCTTTTTTTT

```
ò
                                                                                                                                                       g
                                                                                                                                                                                    ઠે
                                                                                                                                                                                                              음
                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
             2599 CCTTGCTGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCT 2658
                                                                        2899 CCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAA 2958
                                                                                                                                                                                                                                                                                                                                                             2959 GCCCCTTTCCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAA 3018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3079 TTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGATAT 3138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTITITCAAGCAAGTAGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGGCCTCCT 3318
CCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCT 1422
                                                     1423 GGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCA 1482
                                                                                                           2779 CCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACACGG 2838
                                                                                                                                                                                                                                                                                  CCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAA 1722
                                                                                                                                                                                                                                                                                                                                        1723 GGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAA 1782
                                                                                                                                                                                                                                                                                                                                                                                               3019 cercaaccaaaardaccacccardcararcerdcacarrarraarrerraaccacrar 3078
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTATGACCGCCTGGAGCAAGAGCACAACTATTGGTCAACGTCCCTCTCTGCGTGGATAT 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGAGGAACAAGGAGGATCCGTGTCCT 1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3139 GTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCT 3198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GICTITIAAAACIGGCATCATTICCCIGIGIAAAGCACATIIGGAAGACAAGIACAGAIA 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2023 CCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCT 2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 39, Application US/10149736
Publication No. US20030216332A1
GENERAL INFORMATION
GENERAL INFORMATION
APPLICANT: Chamberlain, Jeffrey S.
TITLE OF INVENTION: Mini-Tyekrophin Nucleic Acids and Peptide Sequences
TITLE OF INVENTION: Mini-Tyekrophin Nucleic Acids and Peptide Sequences
FILE REERRICE: UM-05968
CURRENT APPLICATION NUMBER: US/10/149,736
CURRENT FILING DATE: 2002-06-17
PRIOR FILING DATE: 2001-10-04
PRIOR FILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Patentin version 3.1
LENGTH: 5417
                                                                                                                                      2719 deridearidaadeceaacadeaacririogreeacarereageacririorrieacacririor
                                                                                                                                                                   1543 CCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGA
                                                                                                                                                                                                                         1603 GACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGÁGCTCTACCAGTCTTTAGCTGA
                                                                                                                                                                                                                                                     2839 GACTCAAACAACTTGCTGGGACCATCCCAAATGACAGGTCTTACCAGTCTTTAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
JS-10-149-736-39
1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1843
                                                                                                                                                                                                                                                                                  1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3319
                                               * * * * * *
> Q
                                                                                                                                                                                                                       >
                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                         >
                                                                                                                                                                                                                                                                                                         Ď
                                                                                                                                                                                                                                                                                                                                        ≥.
                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                               ≿
                                                                                                                                                                                                                                                                                                                                                                                                                        ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            સ
```

```
1278
                                                                                                                                                                                                                                                                                      ä,
                                                                                                                                                                                                                                                                                                                                                                                                                           1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1159 TCCTTCACAGCCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAGAG 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1339 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1519 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1579 GАААĞĞĞTTĞAATGAÇTGĞÇTAAÇAAAAÇAAAĞAAAĞAAAĞGAAĞĞAAAATGĞAĞĞAAĞA 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1759 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAAGAACTTAAGGTATTGGG 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1879 cerrercaaarggeaacgrerracrgaagaacagreerrrrragrgearggerrreaga 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1939 AAAAGAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAAGATCAAAATGAAATGTT 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 600
                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661 TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721 AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACCGCIGGGIICITIIACAAGACAG 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781 TICTGACCACTGGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCT 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841 GAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901 GCAGAACGATGTACATAGGGCC--TTCAAGAGGAATTGAAAACTAAAGAACTGTAAATC 958
                                                                                                                                                                                                                                                                                                                                                       1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1219 reaagraaaccreeaccriatraaacaccriracaagaagaararraccegecricrirc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 TGCTGAGGACACATTGCAAGCACAAGAAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                          Query Match 76.7%; Score 1611.6; DB 15; Length 5417; Best Local Similarity 85.3%; Pred. No. 0; Matches 1872; Conservative 0; Mismatches 229; Indels 93; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Artificial Sequence
                                                                    FEATURE:
; OTHER INFORMATION: Synthetic
US-10-149-736-39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
```

Oy 1948 GAGGATCCGTGTCTTTAAAACTGGCATCTTCCCTGTGTAAAGCACATTTGGA 2007 Db 3139 GAGGATCCGTGTCTTTTAAAACTGGCATCATTCCCTGTGTAAAGCACATTTGGA 2198 Cy 2008 AGACAAGTACAGATACCTTTTCAAGCAAGTTCAACAGGATTTTGTCACCAGG 2067 Db 3199 AGACAAGTACAGTACTTTTCAAGCAAGTTCAACAGGATTTTGTCACCAGG 2067 Cy 2068 CAGGCTGGGCCTTTTTCAAGCAAGTGCCAAGTTCAACAGGATTTTGTGACCAGG 3258 Cy 2068 CAGGCTGGGCCTCTTTTCAAGCAAGTTCAACAGGATTTTGTGACCAGG 3258 Db 3259 CAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 3292	PRESENT 14 PRESENT 14 PROJECT 14 PROJECT 14 PROJECT 15 PROJEC
959 ATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGGGAGCCTTTGGA 1008	1111

```
AGTATTATCGTGGCTTCTTTC 1079
                                                                                                                                                                                                                                                                         AGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                     AGTATTATCGTGCTTCTTTC 180
                                                                                                                                                                                                   CTGACCCTACACGCAGCCCATT 60
                                                                                                                                                                                                                                                                  TGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                               AATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                          Indels 489; Gaps
                                                                                                  DPHY MINIGENE AND USE
                                                                                                                                                                               Length 3999;
8
```

5 16:30:04 2004

Mon Apr

```
778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                            \dot{\circ}
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                             음. 성
                                                           ò
                                                                                                                    ò
                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAAGAACAAGGAAAATGGAGGAAGA 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA 2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1957 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 2136
                                                                                                                                                                                                                                                                                                                                                                                                                 1717 İCCTİCACAĞCAİTIĞBAAĞCICCIĞAAĞACAAĞICATITĞGCAĞITCATIĞATĞĞAĞAĞ 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1777 roaagraaaccrosaccerrarcaacaccrrrasaasaasaasariarcersscrictric 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 TGCTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 ccaerricaracreargagagracargargarringacageccareaggagerrgg 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           777
                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACGCGCGGGGIICITIIACAAGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rgargaarcragagarcacgcaacrgcractrrggaagaacaacrraaggrarrggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTGAAGTACAAGAGGAGATGAATGTCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGCATGGAAAAACAAAGCAATTTAACATAGAGTTTTAATGGATCTCCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                         61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                          1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
             APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
TITLE OF INVENTION: THEREOF
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT PILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 28
LENGTH: 4966
                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                              489;
                                                                                                                                                                                                                                                             Score 1602; DB 10; Length 4966;
Pred. No. 0;
0; Mismatches 0; Indels 489;
                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 81.1%;
Matches 2101; Conservative (
                                                                                                                                                                                                TYPE: DNA ORGANISM: Homo sapiens :-09-845-416-28
   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
```

	778		
	2437	GCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCT 2	2496
	778		777
	2497	GGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCCAAACTAGAAATGCCATCTTC 2	2556
	778		177
	2557	CITGAIGITGGAGGTACCTACTCATAGAITACTGCAACAGTTCCCCCTGGACCTGGAAAA 2	2616
	778		277
	2617	GITICITGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGG 2	2676
_	778		777
0	2677	GAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGA	2736
~.	778		222
0	2737	CCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCA	2796
~	778		777
0	2797	aatcctgagatccctggaaggttccgatgatgcagtcctgttacaaagacgtttgga	2856
_	778		117
0	2857	CATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT	2916
_	778	3TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG	831
٥	2917	CHGACCAGAGAGAGACTTCTTCTCTCAGGAACTTCTGGTGTG	2976
_	83	GCTACAGCTGAAAGATGAATGAAGCGGCAGGCACCTATTGGAGGCGCACTTTCCAGC (891
0		-BACTGAAAGATGATGAATTAAGCCGCAGAGGCACCTATTGAAGGCGACTTTCCAGC	5 2
>	3037	AGTICAGAMGCAGAACCATGATACAGGCCTTCAAGAGGAATTGAAAACTAAAGAACC	0
· >-	95	TGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGCCTTTGGAAGG	1011
۵.	3097		3156
>,	0.1	ACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCTCCTGAGGAGAGAGCCCAGAATGT	07
. م	3157	ACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGT	7
	0.7	CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCT 	1131 3276
Ω	21	CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAGGTCAATACTGGGAGGTTCAGGGAGGTCAA	19
<u>م</u> د	3277	GCACTCCCCTGACTGCCGCAGAAAAAAAAAAAAAAAAAA	33
>-	19	AGAGGCCACGGATGAG	1251
۵	.3337	AGAGGCCACGGATCAGCTCCTCAAGCTGCCCAAGCTGATGATCAAGGGATCCT	3396
*	1252	GCAGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGC	\vdash
д	3397	ecagecegradesegaretecrearidaetereeraaareaeeregaaaageeaage	45
*	1312	ACTTCGAGGAGAAATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCG	37
д	3457	ACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTC	21
> -	1372	; CCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCT	1431

ρ:	51	
	3577	4 6
	1492	AGCCCACAGAGACTITGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCC 1551
	55	161
	3697	CTGGGAGAGAGCATCTCGCCAAACAAAGGGCCCTACTATATCAACCACGAGACTCAAAC 3756 AACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACGGATGAAAA 1671
	75	CTTTAGCTGACCTGAATAA 3
	1672	
	3817	TGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTG 38/6
	1732	CTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATCTCTTGGACCACAACCTCAAGCA 1/21 CTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACCTCAAGCA 3936
	1792	AAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGATTTGACCACTATTTATGACCG 1851
	3937	AAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCG 3996
	1852	CCTGGAGCAAGAGACAAACAATTGGTCAACGTCCTCTCTGCGTGGATATGTGTCTGAAA 1911
	3997	ccrdsadcaadadcacaacaarrrggrcaacgrcccrcrcrdggarargrdrcrdaa 4056
	1912	CIGGCIGAAHGITIANGANACGGAACGAACAGGAACCGGACCGTGTCTTTAA 1971
	4057	CIGECTECTERATETITATEATACGEGACGAACGAGGAGGATCCGTGTCCTGTCTTTAA 4116
	1972	AACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTTTCAA 2031
	4117	AACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCATTTTCAA 4176
	2032	GCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCAGGCTGGGCCTCCTTCTGCATGA 2091
	4177	GCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCTCCTTCTGCATGA 4236
	2092	TTCTATCCAA 2101
	4237	TICTATCCAA 4246

earch completed: April 5, 2004, 16:34:26 ob time : 546.455 secs

Human dys Human dys Human bon A rod sho A rod sho

cDNA enco Human bre Gene #228

Sequence

cDNA enco Mouse isc Shuttle v

Abk81959 Ab107084 Ab269000 Abs69000 Abs69000 Aba2415741 Aba248160 Abx81160

Mus muscu Human dys Human dys Human dys

Partial s A rod sho

Aaz48569 1 Aaz48566 1 Aan97129 E Aaz48571 2 Abt41896 T

aho sho

A rod

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovitus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                Human; dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                ALIGNMENTS
                                                                                                                                          AAD37243
AAD37231
AAD37235
AAZ48569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 51-52; 71pp; English
                ABK81959
ABT10904
ABN95786
ABS69900
                                                                                          AAZ48568
ABK81960
                                                                                                            ABI99799
AAT27558
                                                                                                                                                                                    AAZ48566
                                                                                                                                                                                                                 ABT41896
                                                                                                                                                                                                                                                                                                                                                              Human dystrophin minigene delta3510.
                                                                               AAZ48567
                                                                                                                                                                                                                                                                                                  AAD37240 standard; DNA; 3510 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                           21-AUG-2002 (first entry)
                                                                                         4402
13815
13815
19307
        12923
13957
13957
13957
13957
1821
                                                                                                                                             1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-NOV-2001.
                                                                                                                                                                                             618.6
613.6
555.6
                  1328.8
1328.8
1328.8
1328.8
1324
1317.8
                                                                                                  1149.6
1149.6
1149.6
                                                                                                                                             937
                                                                                                                                                                         718.8
                                                                                                                                                                                                                                                                                                                       AAD37240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xiao X;
                                                                                                                                                                                                                                                                                RESULT 1
υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Adeno-ass
Human dys
Adeno-ass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA encod
DNA encod
Human dys
Adeno-ass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Adeno-ass
Human dys
Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encod
Human dys
cDNA enco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adeno-ass
Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA encod
Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adeno-ass
Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human dys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Adeno-ass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Adeno-ass
                                                                                  (without alignments)
16463.377 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                 US-09-845-416-12_COPY_900_3000
2101
1 gagctatgcctacacacacagg......ttctgcatgattctatccaa 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                       April 4, 2004, 11:55:32; Search time 542.141 Seconds (without alignments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aad37230 F
Aad37255 Aad37232 F
Aad06794 F
Abk82000 F
Abk82000 F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Aad37237 P
Aad37257 Aad37263 Aad37264 Aad37264 Aad37242 Aad37242 Abk81999 Abk81997 Abk8137234 Aad37256 Aad37266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4ad37240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4bk81998
            5.1.6
Compugen Ltd.
                                                                                                                                                                                                              hits satisfying chosen parameters:
                                                                                                                                                                                       3373863 segs, 2124099041 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
            GenCore version Copyright (c) 1993 - 2004
                                                                                                                                                                                                                                                             ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                      nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD37240
AAD37259
ABK81998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD37257
AAD37263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD37256
AAD37262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD37232
AAD06794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAD37242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABK81999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD37234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABK82000
                                                                                                                                                          IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                  geneseqn2001as:*geneseqn2001bs:*
                                                                                                                                                                                                                                                                                                                                                                      geneseqn2002s:*
geneseqn2003as:*
                                                                                                                                                                                                                                                                                                        Genesed 29Jan04:*
                                                                                                                                                                                                                                                                                                                                                                                          geneseqn2003bs:*
                                                                                                                                                                                                                                                                                                                                                                                                               geneseqn2004s:*
                                                                                                                                                                                                                                                                                                                   geneseqn1980s:*
geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                        geneseqn2000s:*
                                                                                                                                                                                                                                  inimum DB seq length: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44498
444444
444144
444144
64444
64444
64444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4966
4990
4182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5149
2169
5952
8689
11058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63 63 63
                                                                                                                                                                                                              tal number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2101
2101
2101
1750.4
1750.8
1743
1743
17443
17443
1641
1629
1629
1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1419
1328.8
1328.8
1328.8
1328.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                   itle:
erfect score:
                                                                                                                                                           oring table:
                                                       1 nucleic
                                                                                                                                                                                           sarched:
                                                                                                                                          dneuce:
                                                                                                                                                                                                                                                                                                          atabase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 esult
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : no nt
```

spectrin; ; BMD;

N

1979

2039 1200 2099 1260 2159

```
GCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCAT
                                                                                                                                                                                                                                                                                                                                                                      AGAAATTGGGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACTITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTITIGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Argeaagcrichecaggregeegregaggaceaggregaggagergeaggeegaggeeaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATTICCCTGTGTAAAGCACATTIGGAAGACAAGTACAGATACCTTTTCAAGCAAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         carrrecerdrataaagcacarrregaagacaagracagaracerrrreaagcaagrege
                                                          GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGA
                                                                                             <u> ACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGGCCCAGAATGTCACTCGGCT</u>
                                                                                                              ACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTGGCT
                                                                                                                                                         TCTACGAAAGCAGGCTGAGGACGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC
                                                                                                                                                                                                                       TGACTGGCAGAGAAAAAAAGATGAAGCCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                               TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                    GGATGAGCTGGACCTCAAGCTGCCCAAGCTGATCAAGGGATCCTGGCCGGT
                                                                                                                                                                                                                                                                                                                                                  GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                              AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctroadectroaderdecardroardectrogaccadecacacercaadecaaaardaeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTAAAACTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaargrittargaracggacgacgaggaggaggarccgrgrcrgrcrrrraaaacrggcar
                                 GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAA
                                                                                                                                                                                        rcracgaaagcaggcrgaggaggrcaaracrgagrgggaaaaarrgaaccrgcacrccgc
                                                                                                                                                                                                                                                                                    GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                               1860
                                                                                               1021
                                                                                                                           1920
                                                                                                                                                           1081
                                                                                                                                                                                        1980
                                                                                                                                                                                                                         1141
                                                                                                                                                                                                                                                       2040
                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                   2100
                                                                                                                                                                                                                                                                                                                                                   1261
                                                                                                                                                                                                                                                                                                                                                                                2160
                                                                                                                                                                                                                                                                                                                                                                                                               1321
                                                                                                                                                                                                                                                                                                                                                                                                                                              2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1981
                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                             8 & 8
                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95
Pp 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                 ò
                                                          a
                                                                                          8686
                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1739
                                                                                                                                                                                                                                                                     1019
                                                                                                                                                                                                                                                                                                                                  1079
                                                                                                                                                                                                                                                                                                                                                                                                1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGACAG 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA 1799
                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                        959
                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                                                                                                                            09
   dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minispen deltea510 containing nucleotides 1-1668 (N-terminus, hinge H1 and rods R1 and R2), 8407-10227 (rods R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      reargaarcragaagarcacscaacrscracrcrrrggaagaacaacrraassrarress
                                                                                                                                                                                                                                                                                                                        TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccaerricaracreargagggracargarggarricacaggccarcagggccgggrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAAGAAAAAGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGTACTACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGATGATGAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCAT
                                                                                                                                                                            GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                        GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                        TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                    TGCTGAGGACACATTGCAAGCACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGTTTCATACTCATGAGGGTACATGATTGGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTGAAGTACAAGAGCAGATGAATTCTCCTAAATTCAAGATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCT
                                                                                                                                              Gaps
                                                                                                                                            0
                                                                                                            Query Match 100.0%; Score 2101; DB 6; Length 3510; Best Local Similarity 100.0%; Pred. No. 0; Matches 2101; Conservative 0; Mismatches 0; Indels 0;
                                                                                Sequence 3510 BP; 1073 A; 787 C; 828 G; 822 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1740
                                                                                                                                                                            н
                                                                                                                                                                                                                                                                                                                                      1020
                                                                                                                                                                                                                                                                                                                                                                                                    1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1380
                                                                                                                                                                                                          900
                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                          960
                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
     RRRRRR
                                                                                                                                                                            ≿
                                                                                                                                                                                                        સ
                                                                                                                                                                                                                                          ≿
                                                                                                                                                                                                                                                                     ă
                                                                                                                                                                                                                                                                                                        ≿
                                                                                                                                                                                                                                                                                                                                  ă
                                                                                                                                                                                                                                                                                                                                                                    >
                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                  \succeq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ਚੋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ড
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        બ્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    બ્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Я
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

1320

1380

2279

1500

1560

2519

1680

2639 1800 2699 1860

1920

2040

1895

300

2015

360

2075

420

2135

480

2195

540

2255

600

2315

099

2375

720

2435

840

780

2495

900

2555

2615 1020 2675 1080 2735 1140 2795 1200

1141

61 ICCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120

```
TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rcracgaaagcaggcrcaggaggrcaaracrgagrgggaaaaarrgaaccrgcacrccgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2316 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATCGATGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGATGATTAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
1956 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                       2016 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2076 TAGCATGGAAAACAAAGCAATTACATAGAGTTTTAATGGATCTCCCAGAATCAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2136 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGGTTACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rrcreaccadresaadesrcrececrrrcrecadesaacrreresreseracader
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGATGATTAAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gcagaacgangnacanagggccnncaagagggaanngaaaacnaaagaaccignaancan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2616 gagracrerrgagacreracgarrarrrergacagagedecetrrggaaggacragagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTETACCAGGAGECEAGAGGTGCETCCTGAGGAGAGAGCCCAGAATGTCACTCGGET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC
                                                                                                                                               TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGTAGAAGTGGTGAAAGA
                                                                                                                                                                                                                              CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                            301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                          361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                              241 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196
                                                                 121
                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                  8 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                S 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                               ò
                                                                                             임
                                                                                                                                       8 8
                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                           g
                                               The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene in operable linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1656 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09
                                                                                                                                                                                                                                                                                                                                                                                                                Human, dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                            AAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4476 BP; 1252 A; 1096 C; 1127 G; 1001 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 2101; DB 6; Length 4476; Best Local Similarity 100.0%; Pred. No. 0; Marches 2101; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                             Adeno-associated virus vector plasmid, AAV-MCK-3510.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 63-65; 71pp; English.
                                                                                                                                                                                                                                                      AAD37259 standard; DNA; 4476 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-049342/06.
                                                                                                                                             A 3000
                                                                                                          A 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                    21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-NOV-2001
                            2041
                                                                                                          2101
                                                                                                                                               3000
                                                                                                                                                                                                                                                                                             AAD37259,
```

(first entry)

13-AUG-2002

```
3335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2040
                                                                                        1320
                                                                                                                                                                                 3035
                                                                                                                                                                                                               1440
                                                                                                                                                                                                                                          3095
                                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                        3155
                                                                                                                                                                                                                                                                                                                                                                   3215
                                                                                                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1800
                                                                                                                       2975
                                                                                                                                                                                                                                                                                                                                      GGACTITGGTCCAGCATCTCAGCACTITCTTTCCACGTCCAGGGTCCCTGGGAGAG 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGCACAAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCT 1920
                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG 3275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGCACAACAATTTGGTCAAGGTCCCTCTCTGGGTGGATATGTGTCTGAACTGGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3636 CATTICCCTGTGTAAAGCACATTIGGAAGACAAGTACAGATACCTITICAAGCAAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3696 AAGTICAACAGGATITITGIGACCAGCGAGGCTGGGCCTCCTTCTGCATGATTCTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTAAAACTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3576 GAATGITTATGATACGGGACGAACAGGGATCCGTGTCCTGTCTTTTAAAACTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2041 AAGTICAACAGGATITIGIGACCAGCGCAGGCTGGGCCTCCTTCTGCATGTTCTATCCA
                                                                                                                                                                                                                                                                                                                                                             GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTGCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACCACCTCAAGCAAAATGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAATTGGGCCTCTGAAAGAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                 AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                            GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                        GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                     gegegarcrecrearreaerereresagareaereseagaagreaageaageaerregage
                                                                                                                                                    AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                               CACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCGGAAGACCTGAACACCAG
                                                                                                                                                                                                                                          cacrimedecarricacricacedranacercaecacreredaagacereaa
                                                                                                                                                                                                                                                                         ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG
                                                                                                                                                                                                                                                                                                       Arggaagerrergeageregeegregagaegagereageregeageregargeeaageceaaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTGACCTGAATAATGTCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        À 3756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3516
                                                            2856
                                                                                                                       2916
                                                                                                                                                                                                                                              3036
                                                                                                                                                                                                                                                                                                        3608
                                                                                                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                                                                                                                 3216
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3756
 2796
                                                                                        1261
                                                                                                                                                      1321
                                                                                                                                                                                 3976
                                                                                                                                                                                                                1381
                                                                                                                                                                                                                                                                             1441
                                                                                                                                                                                                                                                                                                                                       1501
                                                                                                                                                                                                                                                                                                                                                                      3156
                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 હ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋧
 ă
                             ≿
                                                            ठ
                                                                                        ≿
                                                                                                              વ્
                                                                                                                                                    ⋩
                                                                                                                                                                              ત્
                                                                                                                                                                                                               ≿
                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                હ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         χ.
```

DNA; 5339 BP

ABK81998 standard;

RESULT 3
ABK81998
ID ABK8
KX
AC ABK8

```
1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like respeats, and contains no more than n spectrin-like respeats, where n is an even number between 4-24, or a mucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynuclectide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09
                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aactgaagtacaagagagagatgaatctcctaaattcaagatgggaatgcctcagggtagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                  composition for preparing therapeutic drugs, has a mini-dystrophin sptide comprising a specific number of spectrin-like repeat domains, nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1219 reaagraaaccresaccerrarcaaacascrrrasaasaasrarrarcsrescrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCTGAGGACACATTGCAAGGACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rgcrgaggacacarrgcaagcacaagaagaagarrrrcraargargrggaagrggaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                    Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease; Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 5339 BP; 1638 A; 1191 C; 1187 G; 1323 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    191; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 6;
                         mini-dystrophin protein deltaR2-R21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1760.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                Example 6; Fig 13; 145pp; English
                                                                                                                                                                                                                                   06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 90.3%;
Matches 1910; Conservative
                                                                                                                                                                                                     04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                              SO;
                                                                                                                                                                                                                                                                (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                           WPI; 2002-435334/46.
                                                                                                                                                                                                                                                                                                Chamberlain JS,
                                                                                                                                              WO200229056-A2
                          encoding
                                                                                                      sapiens.
                                                                                                                                                                         11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                   Ношо
요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       дq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
```

1486 GCATGAAGCCCACAGGACTTTGGTCCAGCATCTCAGCACTTTCTTT	2779 GAATAATGTCGGATTCTCAGCTTATAGGACTGCCATGAAAGCTGCAGAAGGGGGGGG	RESULT 4 AAD37238 standard, DNA, 3531 BP. XX AAD37238; XX A AAD37238; XX XX A AAD37238; XX XX Human dystrophin minigene delta3531. XX YX Human; dystrophin minigene, muscular; gene therapy; utrophin; spectrin; XX XX XX XX XX XX XX XX XX XX XX XX XX
1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518 421 TAGCATGGAAAAACAAAGCAATTTACATAGATTTTAATGGATCTCCAGAATCTAGAAACT 480 [GCAGACCTCCAAGGGGAATTGAAGTCCACAGAIGTTTATCACAACCTGGATGAAA 175 TGATGAATCTAGTGAAGTCCGAACTGCTGCTCTTTACACAACGG 181 TGATGAATCTAGTGAAGTCCGAACTGCTGCTGTTACAAAGACG 181 TAGGATAACTTGAGAACTCCTGGAAGTTCCGAAGTGCTCTGTTACAAAGACG 181 TTGGATAACATGAACTTCAAGTGGCAAACATCTGTAGATGCTTTACAGACTCTGTTACAAAGACG 187 TTTGGATAACATGAACTTCAAGTGGAAACATCTGAAAAAGTTCTCTGCAGAACTTCT 825 CCATTTGGAAACATCTGACCAGTGGAACGTCTGCACAAAAAGTTCTGCAGAACTTCT 193 GGTGTGGCTAAAGATCAAAGATGAAAAAAAAAAAAAAAA	1066 GANTGTCA-TCGGCTTCA-CGAAGCA-CGACGACTCAATACTCGGCAAAAATT 125 111

WPI; 2002-049342/06

phin minigene for treating Duchenne or Becker muscular comprises an N-terminal domain, s. H1 and H4 domains and a cysteine rich domain of a dystrophin New dystrophin m dystrophy compri rod repeats, Hl

Example 1; Page 50-51; 71pp; English

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal or modified N-terminal domains and cysteine-rich domains of dystrophin or utrophin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operable linkage with an expression element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating buchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in amamalian subject. The present sequence is human dystrophin minigene deltas331 contraling nucleotides 1-1341 (N-terminus, hinge H1 and rod R1), 8059-10227 (rode R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)

Sequence 3531 BP; 1071 A; 809 C; 824 G; 827 T; ·0 U; 0 Other;

≿

ъ ≿ ă ď ⋩ હ አ ሪ

1439 1199 .260 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1319 960 ICCTICACAGCATTIGGAAGCICCTGAAGACAAGTCATTIGGCAGTICATTGATGGAGAG 1019 1020 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1079 1080 recigadeacacarrecaadeacacaadaadarricraardareredaadrecidaada 1139 1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1259 1320 TAGCATGGAAAAACAAAGCAATTTACATAGAACTCATAGATTACTGCAACAGTTCCCCCT 1379 GGATGCTACCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAA 1499 1500 ACAATGGCAAGACCTCCAAGGTGAATTGAAGCTCACACAGAGGTTTATCACAACCTGGA 1559 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180 240 420 474 534 594 300 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 900 gagerarigeerracacacacacactrarigreaceaceacereraceceracacacacarr 959 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120 09 1140 ccaerricaracreareagggracargargargarrigacagcccarcagggcgggrigg 421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTT-----TTAATGGATCTCCAGAATCA 1380 GGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACA GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGT CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG TGCTGAGGACACATTGCAAGCACAAGAAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC GAGCTATGCCTACACACACGCTTCTCTCACCACCTCTGACCCTACACGGAGCCCATT Gaps Length 3531; 21; 187; Indels Query Match
Best Local Similarity 90.2%; Pred. No. 0;
Matches 1914; Conservative 0; Mismatches 187; 1 241 361 475 535 181 61 301

쉱 ሯ ď ጵ 8 ⋩ q à

⋩

දි

à

ે દ	655	GGTAGTIGATGAATCTAGTGGAGATCACGCAACTGCTGCTTGGAAGA 702
ि	703	TTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGA
gg	1620	Ö
λò	760	TGGGTTCTTTTACAAGACGGTCTGCAGTGGAAGGGTCTGCACTTTCTCTGCAGGA 819
අු	0	AGGICCCAITIGGAAGCCAGIICIGACCAGIGGAAGCGICTGCACCITICICIGCAGGA 17.
λŏ	820	ACTICTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
g G	0	CTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
දු දු	1800	CGACTTTCCAGCAGTTCAGAAGCAGCGATGTACATAGGGCCTTCAAGGGAATTGAA 939
à	40	TAAAGAACCIGIAAICAIGAGACICIIGAGACIGIACAGAA
엄	9	191
à	1000	CCTGAGGAGAG 10
qq	1920	cettiggaagaactagaaaaactetaccagaageeeaagacctagaageteceteagaaga 197
δλ	1060	- 4
ΩÞ	1980	scccadaargrcacrccagcrrcracgaaagcaggcrgaggaggrcaaracrgagrggga 203
λ	1120	CIGGCAGAGAAAAIAGAIGAGACCCTIGAAAGACT 117
DÞ	2040	realaccidecacircecteaciescasaaaaaaaaaaasecciisaaaaaacu 209
ογ	1180	23
Ob	2100	CAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 215
ά	1240	CAAGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCT
QQ	2160	sarccidscaeccediesecercicaticatioactereceaagareaceresa 221
ò	1300	33
Dβ	2220	laaggcacticgaggagaaningcgccictgaaagaaggggggggggggggggggggggggg
ò	1360	CATTCAGCTCTCACCGTATAACCTCAGCAC 141
Ор	2280	gacciigercacciiaaccactiiaaacaiicaaciicicaccaiaiaaccicaacac 233
δ	1420	3GCCGTCGAGGACCGAGTCAG 14
qq	2340	crgapagaccrgapacaccagarggapagcrrcrgcaggrcgrcgrgaggaccaggrcag
ò	1480	53
Ор	2400	cagergeargaageeeckeagggaeiriggreeagearereageacriterrreeaege 245;
ò	1540	
qq	2460	giccagggicccigggagagaggcaicicgccaaacaaaggccciactaiaicaacaa 251
ζ	1600	65
op QG	2520	gagacteraacaactigecreggaccaicecaaaargacagacreracagictitage 2573
<i>&</i> 4	99	TGACCTGAATAATGTCAGATTCTCAGCTTATAGACTGCCATGAAACTCCGAAGACTGCA 1719 HIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
අු	2580	GACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCGGAAGACTGCA 200

Length 4498;

1720

```
comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovinus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                     Sequence 4498 BP; 1251 A; 1118 C; 1123 G; 1006 T; 0 U; 0 Other;
                                                                                                                                                                      83.3%; Score 1750.8; DB 6; 90.2%; Pred. No. 0;
                                                                                                                                                                                                             Conservative
                                                                                                                                                                                           Similarity
                                                                                                                                                                                                           Matches 1914;
                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          595
                                                                                                                                                                                                                                                                                                                19
                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \frac{2}{2}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
     88888888888
                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ਨੇ
                                                                                                                                                                                                                                                                                 2019
                                                                                                                                                                                                                                                                                                                                                   2079
                                      2699
                                                                         1839
                                                                                                          2759
                                                                                                                                             1899
                                                                                                                                                                                                               1959
                                                                                                                                                                                                                                                2879
                                                                                                                                                                                                                                                                                                                  2939
                                                                                                                                                                              2819
                                                                                                                                                                                                                                                                                                                                                                                      2999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                           CCTGTCTTTTAAAACTGGCATCATTTCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                             2640 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                      2940 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                           CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                          caaccicaagcaaaigaccagcccaiggaiaiccigcagairaifaairgirigaccac
                                                                                                                                               TATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                              2760 TATTTATGACCGCCTGGAGCAAGAGACACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                              2820 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                     ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCCT
         GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; dystrophin minigene; muscular; gene therapy; utrophin; eadeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAV-MCK-3531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adeno-associated virus vector plasmid,
                                                                                                                                                                                                                                                                                                                                                                                                                         2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTCTGCATGATTCTATCCAA 3021
                                                                                                                                                                                                                                                                                                                                                                                                                         CCTTCTGCATGATTCTATCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD37258 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-NOV-2001
                                                                           1780
                                                                                                            2700
                                                                                                                                               1840 '
                                                                                                                                                                                                                 1900
                                                                                                                                                                                                                                                                                   1960
                                                                                                                                                                                                                                                                                                                      2880
                                                                                                                                                                                                                                                                                                                                                     2020
                                                                                                                                                                                                                                                                                                                                                                                                                         2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                          3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD37258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chimeric.
```

SSULT

```
2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2556
                                                                                    1716
                                                                                                                                                                              1776
                                                                                                                                                                                                                                                                                                                                                               1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2376
                                                                                                                                                                                                                                                                     1836
                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    594
                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         703 ACAACTTAAGG---TATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCATGGAAAACAAAGCAATTTACATAGAGTT-----TTAATGGATCTCCAGAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2137 égaccitégadadirirentéccitédériracagadéridadadadacitédadereciacida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2377 AAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              820 ACTICIGGIGIGGCIACAGCIGAAAGAIGAATIAAGCCGGCAGGCACCIATIGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                               1837 recreaceacacarrecaaecacaaeeaeaeaearrrrcraarearerecaaerecaaaeaea
                                                                                                                                                                                                                                                                                                                                                                                                               CCAGITITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1957 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2017 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2077 TAGCATGGAAAAACAAATTTACATAGAACTCATAGATTACTGCAACAGTTCCCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2197 gdandcraccegraaggaaaggcrecradaagacrecaagggagraaaaggcreargaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTCAAGAAGATCTAGAACAAGAACAAGTCAAGGGTCAATTCTCTCACATGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2257 ACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2317 IGABARCAGCCARARATCCIGAGATCCTGGAAGGITCCGAIGATGCAGTCCTGITACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   760 CTGGGTTCTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGA
                                                                                                                                                                                                                                                                          1777 rgaagraaaccregaccgrrarcaaacagcrrragaagaagaagrarracceregcrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     655 GGTAG------TIGAIGAAICTAGIGGAGAICACGCAACIGCIGCITIGGAAGA
                                           1 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                         1657 dagciargcciacacacacaccirrargicaccaccicidaccciacaccaagcccarr
                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAATATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
    Gaps
  21;
0; Mismatches 187; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 8
```

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV)

Example 1; Page 62-63; 71pp; English

gene.

Xiao X;

Db 900 GAGCTATGCCTA	3577 TATGTGTCTGAACTGGCTGAATGTTATGATACGGGACGAACAGGAGGATCCGTGT 3636	qq
Query Match Best Local Similarity Matches 2101, Conservat	TATTTATGACCGCCTGGAGCAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA	2 A S
	3457 CAACCICAAGCAAAATGACCAGGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 3516	8 8
CC dystrophin minigene d CC hinge H1 and rods R1, CC and CR domain) and l1:	CAACCTCAAGGAAAHGACCAGCCCANGGANANCCTGGAGATTATTAATTGTTTGACGC 183	8 8
CC control element, in a CC useful for treating DV CC dystrophy (BMD) in a CC	1720 GAAGGCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 1779	g g
	3337 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 3396	q
	3277 GGAGACTCAAACAACTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGG 3336 1660 TGACCTGAATAATGTCAGATTCTCAGGTTATTAGGAACTGGAAAAAAAA	g &
	1600 CGAGACTCAAACAACTTGCTGGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 1659	ờ
rod repeats, H1 gene.	1540 TGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACA 1599 3217 TGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAA	중 음
WPI; 2002-049342/06. New dystrophin minig	1480 GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTTCTTCCACGTC 1539	λ · β
XX PI Xiao X; XX		8
(XIAD/) XIAD	TCTGGAAGACCTGAACACCAGGAAGCTTCTGCAGGTGGAGGACGAGGACCGAAGTCAG	≿
PF 27-APR-2001; 2001WO-UX XX 28-APP-2000; 2000MG-U	1360 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 1419 3037 TGACCTTGCTCCACTTAACTACTACTATAACTATAACTATAACAAAAAA	≵ %
XX PD 08-NOV-2001. XX	2977 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCGCACGTCAA 3036	ď
XX PN WO200183695-A2.	1300 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAAGGAGCGCGCGC	≿
Becker muscular of Homo sapiens.	1240 CAAGGGATCCTGGCAGCCCGTGGCGANCTCCTCATTGACTCTCTCCAAGATCACCTCGA 1299	<u>¥</u> 8
DE Human dystrophin mini, XX XW Human, dystrophin min XW adeno-associated vim	1180 COAGGAATTCAAGAGGCCACGATGAGCTGGACTCAAGCTGGCCCAAGCTGATGTGAT 1239 [<u>γ</u> ä
	AAAATTGAACTGCACTCGCTGACTGGCAGAAAAAAAATGAACCCTTGAAGACT	ซั
AC AAD37237; XX	1120 AAAATTGAACCTGCACTCGCTGACTGGCAGAAAAAAAAAA	<i>\&</i>
RESULT 6 AAD37237 ID AAD37237 standard; DN	1060 AGCCCAGAATGICACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 1119 	Ş ğ
Oy 2080 CCTTCTGCATGA 	1000 GCCTTTGGAAGGACTAGAAACTCTACCAGGAGCCCAGAAGCTGCCTCCTGAGGAGAG 1059 	<u></u> ≿ 9
Db 3697 ATACCTTTTCAM	940 AACTAAAGAACCHGIAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 999 	Σi õ
3637	880 GGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA 939	<u>≯</u> ⊕
		Į

```
ntion relates to an isolated nucleotide sequence encoding igene. The minigene comprises N-terminal or modified N-verme to the modified N-verme and the comprises N-terminal or modified N-verme and the comprise of a spectrin gene, H1 and H4 and H4 generated domains of dystrophin or utrophin gene. The chartes to a recombinant adeno-associated virus (AAV) ophin minigene operably linked to an expression trophin minigene in operable linkage with an expression tra recombinant adeano-associated virus or retrovirus is in a recombinant dystrophy (DWD) and Becker muscular in a mammalian subject. The present sequence is human ene deltasis4 containing nucleotides 1-1668 (N-terminus, SR, R2), 8059-10227 (rods R2, R3 and R24, hinge H4 and 11047-11058 (dystrophin last 3 amino acids)
AAACTGGCATCATTTCCCTGTGAAAGCACATTTGGAAGACAAGTACAG 2019
                                       AGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT 2079
                                                                                                                                                                               AGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT 3756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 yene for treating Duchenne or Becker muscular
an N-terminal domain or modified N-terminal domain,
H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inigene; muscular; gene therapy; utrophin; spectrin;
cus; AAV; Duchenne muscular dystrophy; DMD; BMD;
rrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83.0%; Score 1743; DB 6; Length 3858;
85.8%; Pred. No. 0;
tive 0; Mismatches 0; Indels 348; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89 A; 866 C; 905 G; 898 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9; 71pp; English.
                                                                                                                                                                                                                                                                                         ATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                           ATTCTATCCAA 3778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              igene delta3849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NA; 3858 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
```

Mon Apr 5 15:45:50 2004

GARGCGTCTGCACCTTTCTCTGCAGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGA BATTAAGCCGCACGAGGCCTATTCGAGAACTTCTGGTGGGTCACGCTGAAAGAATGATGA ATTAAGCCGCACGAGGCCTATTGGAGACTTTCCACGAGTTCAAGAGAAAGATGATGA ATTAAGCCGCAGAGGCAATTTGAAAACTTCCACGAGTTCAAGAGAAAGAA	1693 GACTGCCARGAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGT 1752 2940 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGT 2999 1753 AGCTGCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGT 2999 1753 AGCTGCATGATGCCTTGGACCAGCACAACCTCAAGCAAATGACCCAGCCCATGGATAT 1812 3000 AGCTGCATGTTATTATTGTTTGAACCACACTCAAGCAAAATGACCAGCCCATGGATAT 3059 1813 CCTGCAGATTATTATTGTTTGACCACTATTTATGACCGCCTGGAGCACACACA
5 B & B & B & B & B & B & B & B & B & B	6 8 6 8 6 8 6
	778

9

```
8 8
                                                                                                              र्छ हि र्छ
                                                                                                                                                                                                                                                원
상
원
                                                                                                                                                                                                                                                                                                                                                                                       8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9 6 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                868686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 4 2 4 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               상
음
                                                                                                                                                                    2052
3120 TTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCTGAATGTTATGA 3179
                                                                         TACGGGACGAACAGGGATCCGTGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTG 1992
                                                                                                                                                                                                              The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                3180 TACGGGACGAACAGGGAGGATCCGTGTCCTGTTTTAAAACTGGCATCATTTCCTGTG
                                                                                                                                                                    3300 ATTITGIGACCAGCGAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 3348
                                                                                                                                                                                                                                                            ATTITIGIGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4825 BP; 1369 A; 1175 C; 1204 G; 1077 T; 0 U; 0 Other.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 85.8%; Pred. No. 0;
Matches 2101; Conservative 0; Mismatches 0; Indels 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Adeno-associated virus vector plasmid, AAV-MCK-delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 1; Page 61-62; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                            ВР
                                                                                                                                                                                                                                                                                                                                                                                                                         AAD37257 standard; DNA; 4825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-NOV-2001
                                                                       1933
                                                                                                                                                                                                                                                            2053
                                                                                                                                                                 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAD37257
                                                                                                                                                                                                                                                                                                                                                                           ESULT 7

AD3 7257

AD4 37257

AD5 7257

AD5 7257

AD5 7257

AD5 7257

AD6 7257

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-A

AD7 721-
                          ď
                                                                  ጽ
                                                                                                                ď
                                                                                                                                                               ≿ 8
                                                                                                                                                                                                                                                            ≿
```

Gaps

0; Indels 348;

```
2616
                                                                                             1776
                                                                                                                                                                   1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2556
                           1716
                                                                                                                                                                                                                                       1896
                                                                                                                                                                                                                                                                                                          1956
                                                                                                                                                                                                                                                                                                                                                                            2016
                                                                                                                                                                                                                                                                                                                                                                                                                                              2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGITCCGATGATGCAGTCCTGTTACAAGACGTTTGGATAACATGAACTTCAAGTGGAG 2736
                                                                                                                                                                                                      240
                                                                                                                                  180
                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         777
                                                                                      TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                               GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCACTCTGACCCTACACAGGGCCCATT
                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                       recreaseacacarrecaascacaassassasarrrcraarsarsrcaassassasas
                                                                                                                                                                                                                                                                          CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGAGTTGAATGACTGGCTAACAAAAACAAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eccrerregacergarerregagecergaacecaageaceaagraeaacareaagegeereeree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2437 TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2557 CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9617 TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA
GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                        TGCTGAGGACACATTGCAAGCACACAGGAGAGATTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                             TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                               AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                              2017 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTT
                                                                                                                                                                                                                                                                                                                                                                                1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2377
                                 1657
                                                                    61
                                                                                                   1717
                                                                                                                                    121
                                                                                                                                                                     1777
                                                                                                                                                                                                        181
                                                                                                                                                                                                                                         1837
                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                             1897
                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
```

Db 3817 CCTGCAGATTATTAATTGTTTATCACCGCTGGAGCAAGAGCACACAA 3876 Qy 1873 TTTGGTCAACGTCCTTGCGTGGATATTATGACCGCTGGAGCACCACAA 3876 Db 3877 TTTGGTCAACGTCCTTCTGCGTGGATATGTGTCTGAACTGGCTGAATGTTTATGA 1932 TTTGGTCAACGTCCCTTCTGCGTGGATATGTGTCTGAACTGGCTGAATGTTTATGA 3936 Qy 1933 TACGGGACGAACACGGAGATCCGTGTTTTTAAAACTGGCATCATTTCCCTGTG 1992 Db 3937 TACGGGACGAACAGGAGATCCGTGTTTTTAAAACTGGCATCATTTCCCTGTG 1996 Qy 1993 TAAAGCACATTTGGAAGATACAGATACCTTTTCAAGCAAG	AD37263 Standard; DNA; 4848 BP. XX XAD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3849. XZ Adeno-associated virus; XZ Adeno-associated virus; XZ Adeno-associated virus; XZ Adeno-associated virus; XZ Adeno-associated virus; XZ Adeno-associated virus; XZ Adeno-associated virus; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; XZ AD37263; AD37263	
778	10.00 GCCCAGAGAGCTGCCTCCAGAGAGAGACCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1092 1005	3757 AGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCAGCCGATGGATAT 3816 1813 CCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCAAGGAGCACAAA 1872

Sequence 48 tr Y Match tr Local Sim ches 2101; 1 GA 1 680 GA 1 120 TG 1 180 TG 1 1920 CG 1 180 TG 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	144 C; 1180 G; 1119 T; 0 U; 0 Other; Score 1743; DB 6; Length 4848; Pred; No. 0;	0; Mismatches 0; Indels 348; Gaps 1; Qy 778	120 QY 793 120 Db 2820 1799	853 ATTANGCOGGCAGCACTATTGANGGCACTTTCCA 	GGTTGG 300 Db 3000	TGAAGA	SGGTAGC	3651AGC 2099 QY 1153 AAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA AGAAACT 480 Db 3180 AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA AGAAACT 2159	AGGAAGA 540 Db 3240 AGGAAGA 2219 Db 3240	OY 1273 CATTGACTCTCTCCAAGATCACCTCGAGAAAATCAAGCCACTTCGAGGAGAAATTGCGCC	OY 1333 TCTGAAAGAGAACGACGACGACGACGTCGACGCCGCCACCTTGCTCGCCACCTTGGCAT	27 1393 TCAGCTCTCACCGTATAACCTCAGGAAGACCTGAACACAGATGCTTCT		3ATCGATGGGCAACATCTGTAGATGGACAGAGACGCTTTTTTACAGATCCCTGGGAGAGAGA	AGATTACTGCAACAGTTCCCCCTGGAAAAGTTTCTTGCCTGGCTTACAGA 2519 Qy 1573	BD AACTAAAGTGCCTAATGTACGAGATGCTAAAGAAAGA 2579 AGCTGAAACAACAACAACAACAACAAAAAAAAAAAAAAA	Db 3660 AATGACAGAGCTCTACCAGTCTTTAGCTGAATAATGTCAGATT	CTCCAAGGGAGTAAAAGAGCTGAAAGCCTCCAAGGTGAAATTGAAGC 2639 QY 1693 GACTGCCATGAAACTCCGAAGAAGCCCTTTGCTTGGATGTTTGGAAACTCTTAGAGCCCTTTGAAACTCTAGAAACTCCGAAAAGAAACTCCGAAAAGAAAAAAAA
	e 4848 BP; 1405 h Similarity 89	les 2101; Conservative 1 GAGCTATGCCTACACA 1680 GAGCTATGCCTACACA	61 TCCTTCACAGCATTTC		o 4 6	301 TAATATTCTACAATTC	361 AACTGAAGTACAAGA	2040 AACTGAAGTACAAGA 421 TAGCATGGAAAAACA 	481 GAAAGAGTTGAATGA	541 GCCTCTTGGACCTGA	. ~ .	661 TGATGAATCTAGTGG	721 AGATCGATGGGCAAA	2400 AGATCGATGGGCAAA		520	œ	580

```
1872
                                                                                                                                                                                                   1932
                                                                                                                                                                                                                                                                                                    1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                     4079
                                                                                                                                                3899
                                                3780 adcirdeargreardecirregaceageaceagerereageaaaargaceageceargearar 3839
                                                                                                                                                                                                                                                 3900 rridgicaacercerererereresararererereaacreserereaarereaareraaareraaa 3959
                                                                                                                                                                                                                                                                                                                                                 3960 raceegaceaacaegaegarcererererererraraaacreecarcarricerere 4019
                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCAGCCCATGGATAT 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCAAGAGCACAA
                                                                                                                                        CCTGCAGATTATTAATTGTTTGACCACTATTTAAGACCGCCTGGAGCAAGAGCACAACAA
                                                                                                                                                                                                   TITGGTCAACGTCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCTGAATGTTATGA
                                                                                                                                                                                                                                                                                                 TACGGGACGAACAGGAGGATCCGTGTCCTGTCTTTAAAACTGGCATCATTTCCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Artririoridaccadecadecridedecricerrecardaricaaratecaa 4128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2053 ATTITGIGACCAGCGCAGGCTGGGCCTCCTTGCATGATTCTATCCAA 2101
                                                                                                                                                      3840
                                                                                                                                                                                                   1873
                                                                                                                                                                                                                                                                                                       1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                          4020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4080
                                                                                                     1813
                                                                                                                                                                                                                                                                                                                                                                                                       1993
```

ESULT 9 AD37264 D AAD37264 standard; DNA; 5060 BP. x

AAD37264;

21-AUG-2002 (first entry)

Adeno-associated virus (AAV) vector plasmid, AAV-E-CMV-3849.

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.

Homo sapiens. Cytomegalovirus. Unidentified.

himeric.

WO200183695-A2

08-NOV-2001.

27-APR-2001; 2001WO-US013677.

28-APR-2000; 2000US-0200777P

(XIAO/) XIAO X.

Xiao X;

WPI; 2002-049342/06.

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, cad repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1; Page 70-71; 71pp; English.

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to a expression control element. The dystrophin minigene in operable inkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is

88888	useful for treating Duchenne muscular dystrophy (BMD) in a mammalian subject vector plasmid construct containing hu creatine kinase (MCK) enhancer, a cytosmall polyA signal sequence	dystrophy (DMD) and Becker muscular . The present sequence is AAV man dystrophin minigenes, a muscle megalovirus (CMV) promoter and a
X &	Sequence 5060 B	G; 1160 T; 0 U; 0 Other;
Z B C	uery Match 83.0%; Score 174 est Local Similarity 85.8%; Pred. No. atches 2101; Conservative 0; Mismat	3; DB 6; Length 5060; 0; ches 0; Indels 348; Gaps 1;
ò	1 GAGCTATGCCTACACACAGGC	TCACCACCTCTGACCCTACACGG
Op	1892 GAGCTATGCCTACACACAGGCTGCTTATG	TCACCACCTCTGACCCTACACGGGGCCCA
à	61 TCCTTCACAGCATTTGGAAGCTCCTGAA	0
d D	1952 TCCTTCACAGCATTTGGAAGCTCCTGAA	CAAGTCATTTGGCAGTTCATTGATGGAGAG 20
8	12	
3 8	ZOLZ LGMGLMACCIGGACCCCLIDICATION	TTCTAATGATGTGGAAGTGGTGAAAGA 24
검	2072 TGCTGAGGACACATTGCAAGGACAAGGA	
ò	241 CCAGTTTCATACTCATGAGGGGTACAT	GATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
ο̈́ο	2132 CCAGTTTCATACTCATGAGGGGTACAI	rttgacaccatcaggggggggt
ઠે	. 301 IAATATTCTACAATTGGGAAGTAAGCT	SAAGATGAAGA 3
Ωp	2192 TAATATTCTACAATTGGGAAGTAAGCT	BACAGGAAATTATCAGA
8 5	2) 361 AACTGAAGTACAAGAGCAGATGAATCTCC	TAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
8	421 TAGCATGGAAAAACAAAGCAATTTACAT	GAGITITAATGGATCTCCAGAATCAGAAA
d d	2312 TAGCATGGAAAACAAAGCAATTTACA	
ਨੇ	481 GAAAGAGTTGAATGACTGGCTAACAAAAA	CAGAAGAAAGAACAAG
Dp	2372 GAAAGAGTTGAATGACTGGCTAACAAAAA	CAGAAGAAGGAAAATGGAGGAA
ò	541 GCCTCTTGGACCTGATCTTGAA	GCCAAGTACAACATAAGGTGCTTCA 6
අු	2432 GCCTCTTGGACCTGATCTTGAAGACC	GGCCAAGTACAACATAAGGTGCTTUA 249
8 8	29 601 AGAAGATCTAGAACAAGAACAAGTCAGGGT	STCAATTCTCTCACTCACATGGTGGTGGTAGT 660
3 &	661 TGATGAATCTAGTGGAGATCACGCAAC	IGCTITGGAAGAACTTAAGGTATTGGG 72
g		CTGCTTTGGAAGAACAACTTAAGGTA
ò	721 AGATCGATGGGCAAACATCTGTAGATG	CAGAAGACCGCTGGGTTCTTTACAA
qq	2612 AGATCGATGGGCAAACATCTGTAGATGG	cagaagacgcregircrirracaagacac 26
ŏ	22	777
QC	2672 TCATAGATTACTGCAACAGTTCCCCCTG	GACCTGGAAAAGTTTCTTGCCTGGCTTACAGA 2731
à	2y 778	
q	2732 AGCTGAAACAACTGCCAATGTCCTACAG	-
8	Oy 778	777

Db 3872 AATGACAGAGCTCTACCAGTCTTTAGCTGACTGATAATGTCAGATTCTCAGCTTATAG 3931 Qy 1693 GACTGCCATGAAACTCCGAAGACTGCAGAAGACTCTTGGATCTCTGAGCCTGTC 1752 Db 3932 GACTGCCATGAAACTCCGAAGACTGCAGAAGACTCTTGGATCTTTTTGGAGCTGTC 3991 1753 AGCTGCATGTGATGCCTTGGACGCACACCTCAAGCAAATGACCAGGCTTAT 1812 Qy 1813 CCTGCAGATTATTAATTGTTTGACCACACACTCAAGCAAATGACCAGGCTATAT 4051 Db 4052 CCTGCAGATTATTAATTGTTTGACCACACACTCAAGCAAAATGACCAGGCCAAGAAT 4111 Qy 1873 TTTGGTCAACGTCCTCTCTGCGCACATTTATGACCAGCTGAAGAGCACAACAA 4111 Qy 1873 TTTGGTCAACGTCCTTCTGCGTGAATTTATGACCGCTGGAAGGCACAACAA 4171 Qy 1933 TAAGGGACGAACAGGGAGGATCCGTGTCTTTAAACTGGCTGCTGAATTTATGA 1932 Qy 1933 TAAGGGACGAACAGGAGGATCCGTGTCTTTTAAACTGGCTGCTGTGTTTATGA 1231 Qy 1933 TAAGGGACGAACAGGAGGATCCGTGTCTTTTAAACTGGCTGCTGTGTTTATGA 1231 Qy 1933 TAAAGCACATTTGGAAGACAAGTACAGTCTTTTTAAACTGGCAACTTTAACAGG 2052 Qy 1933 TAAAGCACATTTGGAAGACAAGTACAGTCTTTTTAAACTGGCAACTTTAACAGG 2052 Qy 1933 TAAAGCACATTTGGAAGACAAGTACAGTCTTTTTAAACTGGCAACTTTAACAGG 2231 Db 4132 TAAGGGACGAACAGGAAGACAAGTACCTTTTTAAACTGGCAACTTTAACAGG 4291 Qy 2053 AATTTGGTGACCACTTTGGAAGCCCTTCTGCATGATCTATCCAAA 4340 2053 ATTTTGGACCACTTTGGAGGCCCCTTCTGCATGATCTTTAACCAA 4340	RESULT 10 AAD37260 XX XC AAD37260; XX XC AAD37260; XX XX AAD37260; XX XX Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; XX Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; XX Human; dystrophy; ds. XX Human; dystrophy; ds. XX Homo sepiens. XX HOW sepiens. XX XX XX XX XX XX XX XX XX XX XX XX XX
2792 CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 2851 778	GACTGTAGGAATATTTCTGACAGAGGAGCCTTTGGAAGGAA

```
domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
```

nce 4414 BP; 1255 A; 1075 C; 1086 G; 998 T; 0 U; 0 Other;	y Match Local Similarity 88.0%; Pred. No. 0; hes 1848; Conservative 0; Mismatches 190; Indels 63; Gaps 3;	1 GAGCTATGCCTACACACACACGGTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60	61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAAGAG 120 	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180 1777 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1836	181 TGCTGAGGACACATTGCAAGCACAAGGAGACATTTCTAATGATGTGGAAGTGGTGAAAGA 240 	241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300 	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420 	421 TAGCATGGAAAAACAAATTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480 1017 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 2136	481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAACAACAAGGAAATGGAGGAAGA 540 2137 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAGA	541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 600 	601 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	661 IGAIGAATCTAGIGGAGAICACCCAACIGCIGCTTIGGAAGAACAACTTAAGGIAITIGGG 720 	721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAG 780 2377 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAT 2436	781 TICIGACCAGTGGAAGCGICTGCACCTITCTGCAGGAACTICTGGTGGGCTACAGCT 840 	841 GAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA 900
Seguence	Query Mat Best Loca Matches	٠ ،	, ,			٠ ،	~ ^	~ ^	\ \ \ \	` ^		` ^	× 0	~ ^		,

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy minigene delta3447 containing nucleotides 1-1992 (N-terminus, hinge HI and rods RI, R2 and R3), 8749-10227 (rod R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                          2040
                                                                                                                                                                           2100
                                                                                                                                                                                                                                     3693
   3573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene therapy; utrophin; spectrin; muscular dystrophy; DMD; BMD;
                                                                                                                                                                                                                               3634 AAGTICAACAGGATTITGIGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA
3514 GAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTAAAACTGGCAT
                                                          CATITICCCTGTGTAAAGCACATITIGGAAGACAAGTACAGATACCTTTTCAAGCAAGTGGC
                                                                                                       2041 AAGTICAACAGGATITIGIGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3446 BP; 1074 A; 766 C; 787 G; 819 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human, dystrophin minigene; muscular; adeno-associated virus; AAV; Duchenne Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Page 53-54; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human dystrophin minigene delta3447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD37242 standard; DNA; 3446 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                             2101
                                                                                                                                                                                                                                                                                                                                                                    A 3694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-NOV-2001
                                                                                                                                                                                                                                                                                                             A,
                                                                                                                       3574
                                                                                                                                                                                                                                                                                                                                                                    3694
                                                                                                                                                                                                                                                                                                         2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAD37242;
                                                             1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
      ŏ
                                                                >
                                                                                                                       ŏ
                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                            ŏ
```

```
TCTACGAAAGCAGGCTGAGGAGACACAGAGTGGGGAAAAATTGAACCTGCACTCCGC 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1319
                                                                                                                                                                                                                                                                                                                                                1378
                                                                                                                                                                                                                                                                                                                                                                                                 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                               1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1559 idaitdaaichadhdadahtacacaachdchdchrinddaacaachachnaaddhariddd 1618
                                                                                                                                                       1139
                                                                                                                                                                                                     1199
                                                           1019
                                                                                                         1079
                                                                                                                                                                                                                                                    1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                       600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                 240
                                                                                                                                                                                300
                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                          480
                                   120
                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .679 ccricricalaridecaladentracrealeadaladreccrrritaerecaldecrircaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841 GAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         atcaagtcttcaaaaactggccgttttaaaagcggatctagaaaagaaaagcaatccat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gaaagagttigaatgactiggctaacaaaaacagaagaagaagaacaaggaaaatggaggaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCT
                                                   rgaagtaaaccregaccerrarcaacaccrrragaagaagrarrarcergcrrrrrc
                                                                                                                                                                                               TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                  TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                  AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                           gaaagagttgaatgactggctaacaaaaacagaagaaaaagaacaagaaaaatggaggaaga
                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                             1439 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900 GAGCTATGCCTACACACACGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                     TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                 TGCTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                       recreaecacacraceaecacaaecacaaeaaarrircraarearerecaaeres
                                                                                                                                                                                CCAGTITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                            TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAQAAGTATTATCGTGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGA--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATGAATCTAGTGGAGATCACGCAACTGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     196
                                                                                                                                                                                                                                                       1200
                                                                                                                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721
                                                                                      121
                                                                                                             1020
                                                                                                                                                           1080
                                                                                                                                                                                   241
                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                       1320
                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                     1379
                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                       61
                                                                960
                                                                                                                                     181
                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                               8 8
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                 ΩÞ
                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                      g
                                                                                                                                                                                                     qq
                                                                                                                                                                                                                               ठे
                                                                                                                                                                                                                                                                                                                             ò
                                                                                ð
                                                                                                         ద
                                                                                                                                     ઠે
                                                                                                                                                                                  ò
                                 장염
```

64;

Indels

77.5%; Score 1629; DB 6; 87.9%; Pred. No. 0; tive 0; Mismatches 190;

Query Match Best Local Similarity 87.99 Matches 1847; Conservative

ö

Length 3446;

ВP

DNA; 5462

≿

```
ABK81999 standard;
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                  1560
                                                                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2935
 1985
                                                                               1260
                                                                                                         2095
                                                                                                                                  1320
                                                                                                                                                            2155
                                                                                                                                                                                      1380
                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                    2275
                                                                                                                                                                                                                                                                                               1500
                                                                                                                                                                                                                                                                                                                                                                            2395
                                                                                                                                                                                                                                                                                                                                                                                                                               2455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2875
                                                                                                                                                                                                                 2215
                                                   ------AAGAGTACAGCACAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                               GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                                       GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                                                                  GGGCGATCTCCTCATTGACTCTCTCTCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                        GGGCGATCTCCTCATTGACTCTCCCAGATCACCTCGAGAAAGTCAAGGCCACTTCGAGG
                                                                                                                                                                                       AGAAATTGCGCCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                 <u> AGAAATTGCGCCTCTGAAAGAGGACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC</u>
                                                                                                                                                                                                                                          CACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACAG
                                                                                                                                                                                                                                                                    cactringedeatreaecreteaecataraaecreaecaereresaagaecreaae
                                                                                                                                                                                                                                                                                               ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAG
                                                                                                                                                                                                                                                                                                               ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG
                                                                                                                                                                                                                                                                                                                                                  GGACTITGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                             2336 GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                       AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                               AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAACAAATAATGTCAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       crcaectraraggacreccargaaacrecgaagacrecagaaggecerrrecrregarer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAAAATGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         crigagecrereagergergargecriggaecrageacaaecreaageaaaargaeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAACTGGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTTAAAACTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTTAAAACTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAAGCAAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATTICCCTGTGTAAAGCACATITGGAAGACAAGTACAGATACCTTTTCAAGCAAGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTTCAACAGGATTTTGTGACCAGGGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA
                           TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
-----TAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAACTTGAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATTICCCIGIGIAAAGCACATIIGGAAGACAAGIACAGATACCII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                    2216
                                                                                                                                                                                                                                                                                                                                                                                                                               2396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2101
                                                                                                                                                                                                                                                                                               1441
                                                                                                                                                                                                                                                                                                                       2276
                                                                                                                                                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                                                                                                                                                                                       1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2936
                                                                                                       2036
                                                                                                                                                                                                                 2156
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1801
                           1141
                                                   1986
                                                                            1201
                                                                                                                                  1261
                                                                                                                                                           2096
                                                                                                                                                                                      1321
                                                                                                                                                                                                                                          1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                   ō
                                                                                                   Ū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>≻</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋩
```

```
The invention describes a composition comprising a mini-dystrophin peptide comprising a gpectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAATATTCTACAATTGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccagrircaracteardaggggracardargarrirdacagcccarcagggcragg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGITITCATACICAIGAGGGGIACAIGAIGGAITIIGACAGCCCAICAGGGCCGGGIIGG
                                                                                                                Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease;
Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1629; DB 6; Length 5462;
Pred. No. 0;
0; Mismatches 190; Indels 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5462 BP; 1668 A; 1225 C; 1212 G; 1357 T; 0 U; 0 Other;
                                                             mini-dystrophin protein deltaR2-R21+H3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Fig 14; 145pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 85.4%;
Matches 1911; Conservative
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UNMI ) UNIV MICHIGAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-435334/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chamberlain JS,
                                                                                                                                                                                                                                                                                                    WO200229056-A2.
                                                             ONA encoding
                                                                                                                                                                                                             Homo sapiens
Synthetic.
   13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                 11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (DMD). Thi
invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

ö

1218

120

1278

240

300

360

ESULT 12 BK81999

180

1158

'n

Mon Apr

⋩

ð

8 % 8 % 8 %

\$ 9 \$

4 4

8 % 8

35 AS

क क्र क

* * * * *

8 % 8 % 8 % 8

≿ 8

GTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1	<i>\</i> 0	1303 AGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAGAGAACGTGAGCACGTGACGTGATGA 1362
1459 AACTGAAGTACAGAGAGGAGATGAATCTCCTAAATTCAAGAGAGGAATGCCTCAGGGTAGC 120	q d	AGTCAAGGCACTTCGAGGAAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGA
TAGCATGGAAAAACAAAGCAATTTACATAGAGTT4	& 8	1363 CCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCT 1422
1519 TAGCATGGAAAACAAAGGAATTTACATGCTCCTGGACTGACCACTATTGGAGCCTGTCC 1578 455	ò	GGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCA
1579 TACTCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCCAA 1638	a 8	2659 GGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACGAGTCAGGCA 2718 3403 GAHCAAHGAAAGACAAGAAGAAHHGGAAGAAHTHGAGAAHTHGAAGAAHTHGAAGAAHTHGAAGAAHTHGAAGAAHTHGAAGAAHTHGAAGAAHTHAAGAAAAAAAA
455	7 A	GCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCTTTCCACGTCTGT 2
ACTGAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAAGAAAGGAAATGGAGGA	yo, qo	1543 CCAGGGTCCCTGGCAGAGAGCATCTCGCCAAACAAAGTGCCCTACTATATCAACCAGA 1602 2779 CCAGGGTCCCTGGGAGAGAGAGACATCTCGCCAAACAAAGTGCCCTACTATATCAACCAAC
1699 CCTGGAAAĄGTTTCTTGCCTGGCTTACAGAAGCTGAAACAGCTGCCATGTCCTACAGGA 1758 538 AGAGCCTCTTGGACCTGATCŢTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCT 597	ð	GACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGA
	ପୁ (
598 TCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA	장 옵	1663 CCTGAATATGTCAGATTCTCAGGTTATAGGACTGCCATGAAACTCCGAAGACTGCGAGAA 1/22 2899 CCTGAATAATGTCAGATTCTCAGGTTATAGGACTGCCATGAAACTCCGAAGACTGCGAGAA
AGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACA	V.O. du	1723 GGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAA 1782
1879 AAACAGCCAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGATGCAGTCCTGTTACAAAG 1938 706 ACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTG 762	٧٥ لو	1783 CCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTGACCACTAT 1842
1939 ACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAG 1998 763 GGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACT 822	i ko	TTATGACCGCCTGGAGCAGAGCACAACATTTGGTCAACGTCCCTCTCTGCGTGGATAT
	a 8	3079 TIATGACCGCCTGGAGCAAGAACAACAATTGGTCAACGTCCCTCTCTGCGTGGAIAT 3138
823 TCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA	À 8	GIGILLOMAN GOCIOCIONE GARACTI III III III III III III III III III
CITTCCAGCAGTTCAGAAGAAGATGATAAGATTAAGGGCCTTCAAGAGGGAATTGAAAACGATTCAAGAGGAATTGAAAACGATCATAGGGCCTTCAAGAGGAATTGAAAAC	λό qa	1963 GICTITIBABACTGGCAICAITICCCTGIGIBABAGCACATITGGBAGACAAGTACAGATA 2022
TARAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAGTATTTCTGACAGAGCAGCC 100	çç da	2023 CCTTTTCAAGCAAGTGGGAAGTTCAACAGATTTTGTGACCAGGGCTGGGCTGGGCTCCT 2082
2179 TAAAGAACCIGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCC 2238 1003 TTTGGAAGGACTAGAGAAACTCTACGAGAGCCCAGAGAGCTGCCTCCTGAGGAGAGGC 1062	% qa	2083 TCTGCATGATTCTATCCAA 2101
CCAGAATGTCACTCGGCTTCTACGAAAGCCTGAGAGGCTCACTCTGAGGAAAA 112 CCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGAGAAAA 112 CCAGAATGTACACGGCTTCTACGAAAGCAGGCTGAAAGAGAGGTCAATACTGGAAAA 235	RESULT 13 ABK81997 ID ABK815	3 81997 standard: DNA: 5417 BP.
ATTGAACCTGCACTGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCA	XX AC ABK81 XX DT 13-AU	997; 3-2002 (first entry)
1183 GGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAA 1242		. encoding mini-dystrophin protein deltaR4-R23.
2419 GGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAA 2478 1243 GGGAATCCTGGCAGCCGATGAGCGATTCTCCAAGATTGACTTCTCAAGATTCACGAGAA 1302		Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease; Duchenne's muscular dystrophy; DMD; dystrophin; ds.
GGGATCCTGGCAGCCCGTGGGGGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAA		Homo sapiens. Synthetic.

```
841 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1468
                                                                                             1699
                                                                                                                                                              1759
                                                                                                                                                                                                                             1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1111
                             1639
                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1111
541
                                                             601
                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                               901
                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ૪
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뎡
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                             δ
                                                                                      임
                                                                                                                         8
                                                                                                                                                          g
                                                                                                                                                                                          ò
                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                             \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAPAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA 540
                                                                                                                                                                                                                                                                                                                            The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a mucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1279 recreaceacartrecaaceacaagagagarrrcraargargregagagargrega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1099 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                             A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5417 BP; 1700 A; 1192 C; 1182 G; 1343 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              229; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1611.6;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                              Disclosure; Fig 12; 145pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 85.3%;
Matches 1872; Conservative
                                                               04-OCT-2001; 2001WO-US031126
                                                                                              06-OCT-2000; 2000US-0238848P
                                                                                                                                                               ŝ
                                                                                                                                                              Chamberlain JS, Harper
                                                                                                                            (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                               WPI; 2002-435334/46
WO200229056-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
```

```
2478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2418
                                                                                                                                                                1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2718
                                                                                                                                                                                                                                                                                     1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2239 ACAGACAACTGTAATGGAAACAGTAACTACGGTGACCACAAGGGAACAGATCCTGGTAAA 2298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1939 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1998
                                                                                                           099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGATGAATTAAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGAACGATGTACATAGGGCC - TTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             959 ATGAGTACTCTTGAGACTGTACGAATATTT------CTGACAGAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2059 gedcaaachgranncachcaaacaagahchncrnncaacachgaagaanaaghcaghgac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2179 ACTIGAAAAGAGTACAGCACAGAITICACAGGCIGTCACCACCACCACCACCATCACIAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---TGAGTGGGAAAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAAATAGATGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2299 gcariecticaagaggaacritccaccaccaccreceaaaagaagaggagaritacrietiga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGCGGATCTCCTCATTGACTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTT
GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                               GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1999 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1009 AGGACTAGAGAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2359 retrigaahdacrecaddaacrreaadaggeeacadgardaagcreaaccreaagcreeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u> AGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGACGT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTCACTCGGCTTCTACGAAGCAGGCTGAGGAGGTCAATAC----
```

```
2838
                                                                                                                                                                                                                                                                                                                                                                                             3018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3138
                                                                                    1647
                                                                                                                                                                        1707
                                                                                                                                                                                                                  2898
                                                                                                                                                                                                                                                               1767
                                                                                                                                                                                                                                                                                                         2958
                                                                                                                                                                                                                                                                                                                                                   1827
                                                                                                                                                                                                                                                                                                                                                                                                                                         1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3199 AGACAAGTACAGATACCTTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCG 3258
1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTA
                                                                                                                                                                        CCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACT
                                                                                                                                                                                                  2839 CCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACT
                                                                                                                                                                                                                                                               CCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGC
                                                                                                                                                                                                                                                                                           CCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGC
                                                                                                                                                                                                                                                                                                                                                   CTIGGACCAGCACAACCICAAGCAAAAIGACCAGCCCAIGGAIAICCIGCAGAIIAIIAA
                                                                                                                                                                                                                                                                                                                                                                                             crregaccaccaccaccrcaaccaaaargaccagcccarggararccrgcagarrarraa
                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGITIGACCACTATITATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAAGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3019 TIGITIGACCACTATITATGACCGCCTGGAGCAAGAGCACAACAATTIGGICAACGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTCTGCGTGGATATGTGTCTGAACTGGCTGAATGTTTATGATACGGGACGAACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGATCCGTGTCTTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3139 GAGGATCCGTGTCTTTTTAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCG
                                       retriceaegrereresegreceresegaseaegasecareresecaaaegasecera
                                                                                      CTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTA
  CAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 3292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human dystrophin minigene delta3990.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAD37234 standard; DNA; 3999 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Нощо варіепв
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-AUG-2002
                                          2719
                                                                                                                              2779 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3259
                                                                                                                                                                                                                                                                                                                                                                                             2959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2068
  1528
                                                                                    1588
                                                                                                                                                                          1648
                                                                                                                                                                                                                                                            1708
                                                                                                                                                                                                                                                                                                      2899
                                                                                                                                                                                                                                                                                                                                                                                                                                       1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3079
                                                                                                                                                                                                                                                                                                                                                   1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAD37234
```

```
AAD37234;

X. 21-AUG-2002 (first entry)

E. Human dystrophin minigene delta3990.

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin;

Human; dystrophy; ds.

Homo sapiens.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.

WO200183695-A2.
```

```
1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1200 TAATATICITACAATIGGGAAGTAAGCIGATIGGAACAAGGAAAATIATCAGAAGAIGAAGA 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1440 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA 1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to an isolated nuclectide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specitin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta3990 containing nucleotides 1.1668 (N-terminus, hinge H1 and rode R1 and R2), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  600
rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1080 recreaceacarrecaaceacaacaacaacaacarrircraarearerereaacaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAACAACAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900 gagciaigeciacacacacacieciiaigicaccaccicieacciacaccaai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960 recricacadearringaaderecreaagacaagrearringeadricarreardaagag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                         Query Match 76.2%; Score 1602; DB 6; Length 3999; Best Local Similarity 81.1%; Pred. No. 0; Matches 2101; Conservative 0; Mismatches 0; Indels 489;
                                                                                                                                                                                                                                                                                                                                          Sequence 3999 BP; 1223 A; 907 C; 933 G; 936 T; 0 U; 0 Other;
                                                         Example 1; Page 46-47; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             상
원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D
D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
```

1370 ACTICGAGGAGAATTGGCCCTCTGAAGAGACGTGAGCCCGTCAATGACCTTCCTCGCCCTCTGAAGACGTCTCTCCCCGTCTCCCCGTCTCCCCGTCTCCCCCTCTCCCCCTCTCTCCCCCTCTCTCCCCCTCTC	RESULT 15 AAD37256 standard; DNA; 4966 BP. XX AC AAD37256; XX XX XX XX XX DT 21-AUG-2002 (first entry) XX XX XX XX XX XX XX XX XX XX XX XX XX
16.0	1072 CACTOGGCTTCTACGAAAGCAGGCTGAGGACTCAATACTGAGTGGGAAAAATTGAACCT 1131 2460 CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCGATACTGAGTGGGAAAAATTGAACCT 1131 1132 GCACTCCGCTGACTGGCAGAAAAATAGATGAGCCCTTGAAAGACTCCAGGAACTTCA 1191 2520 GCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCA 1191 2520 GCACTCCGCTGACTGGCAGAAAAAAAAATAGATGAAGCCTTGAAAGACTCCAGGAACTTCA 2579 1192 AGAGGCCACGGATGAGCTGAGAAAAAAATGAGCGCCAAGCTGAGAAAGATCAGGAACTCCTG 2539 1252 GCAGCCCGTGGGGGATCTCCTCAAAGCTGCGCCAAGGTGAAAGTCAAGGC 1311 2640 GCAGCCCGTGGGGGATCTCCTTCAAAGGTCCAAGATCACCTCGAGAAAGTCAAGGC 1311 2640 GCAGCCCGTGGGGGATCTCCTCTTGAAAGATCACCTCGAGAAAGTCAAGGC 2699 1312 ACTTCGAGGAAAATTGCGCCTCTGAAAAGATCACCTCGAGAAAGTCCAGTGGTCG 1371

5 15:45:50 2004

Mon Apr

GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA

181

8 8 8

27-APR-2001; 2001WO-US013677 28-APR-2000; 2000US-0200777P WO200183695-A2 (XIAO/) XIAO 08-NOV-2001

WPI; 2002-049342/06

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

g g

셤

ò Вb

ŏ g 8 8

8 6 8 6 8 6

868686

Example 1; Page 59-60; 71pp; English

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating buchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence

Sequence 4966 BP; 1403 A; 1216 C; 1232 G; 1115 T; 0 U; 0 Other;

දි ે 셤

ል

1896 2016 2136 1716 1776 1836 1956 240 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 2076 480 120 180 300 360 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1777 rgaagraaaccrgcaccerrarcaaacaecrrragaagaagaarrarceregcrrcrrrc 1837 recreaseacacarrecaaseacacaaseasarricraareareregaasreseasea CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1657 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT ccaerrrcaractergadddaracardaragarrrgacagcccarcadddgggrrgg GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1717 recricacagearregaagerecrgaagacaarecarrregeagricarregagagag TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC Gaps 0; Indels 489; Query Match 76.2%; Score 1602; DB 6; Length 4966; Best Local Similarity 81.1%; Pred. No. 0; Marches 2101; Conservative 0; Mismatches 0; Indels 489 1957 2077 121 241 1897 301 361 421 181

8 à g ò d à g

ਨੇ

8 6 6 6 6

 δ g 8 8

> ò 셤

ઠ

2916 3036 3096 1011 3156 2376 2436 2976 1072 CACTCGGCTTCTACGAAAGCAGGCTGAGGACGTCAATACTGAGTGGGAAAAATTGAACCT 1131 2316 2496 2556 2616 2676 2736 2796 2856 2196 2256 720 951 999 777 777 111 777 891 GCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC TGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGG AAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGA <u> agricagaagcagaacgargracaragggccrrcaagagggaarrgaaaacraaagaacc</u> TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG 2437 GCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCT 2497 GGTGACCACCTGTGGTTACTAAGGAAACTGCCATCTCCAAACTAGAAATGCCATCTTC CTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAA 2617 GITTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCG 2677 TAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGA 2737 CCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCA 2857 TAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT ----caginciga coagregaa gogici goa cominici ci goagaa ci i ci gorga GCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC **AGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACC** ACTAGAGAAACTCTACCAGGAGCCCAGAGGCTGCCTCCTGAGGAGAGAGCCCAGAATGT GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA GCCTCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACATAAGGTGCTTCA TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGA---GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 3097 3037 1012 2977 2137 2197 2257 2317 721 2377 2557 778 2797 778 832 892 952 541 601 661 778 778 778 778 778 778 778

Job time : 574.141 secs

earch completed: April 4, 2004, 18:20:51

```
April 4, 2004, 12:04:07; Search time 5477.46 Seconds (without alignments) 16625.161 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2101
1 gagctatgcctacacacagg......ttctgcatgattctatccaa 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6940544
GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3470272 seqs, 21671516995 residues
                                                                                                                                                                                                                                                                                                                                                                                                         US-09-845-416-12_COPY_900_3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                             4 nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_htg_vrt:*
em_sy:*
em_htgo_hum:*
em_htgo_mus:*
em_htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em sts:*
em un:*
em ht; *
em ht; *
em htg hum:*
em htg other:*
em htg other:*
em htg old:*
em htg pla:*
em htg mus:*
em htg mus:*
em htg man:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inimum DB seq length: 0 aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenBmbl:*

1. gb_ba:*

2. gb_htg.*

1. gb_om:*

1. gb_om:*

1. gb_ph:*

1. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ph:*

2. gb_ni:*

2. gb_ni:*

2. gb_ni:*

3. gb_ni:*

3. gb_ni:*

4. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_ni:*

6. gb_
                                                                                                                                                                                                                                                                                                                                                                                                         tle:
erfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       atabase :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sarched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    squence:
                                                                                                                                                                                                                                                    no ur
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	AX538620 Sequence	AX538621 Sequence	ARSJOSTY SEGUENCE AR304538 Seguence	AX114289 Seguence	AX538622 Sequence	AX538624 Sequence AX538627 Sequence	X14298 Human mRNA	AX409637 Sequence	M18533 Homo sapien	AR220819 Sequence	E30220 Shortened a	AF070485 Canis fam	AX306153 Sequence AX538582 Sequence	M68859 Mouse dystr	AR093392 Sequence AR142592 Sequence	X13369 Chicken mRN	E30221 Shortened a M37645 Torpedo cal	E30218 Shortened d	M18025 Mouse dystr E30223 Shortened d	AF339031 Danio rer	AJ002967 Rattus no AX538584 Semence	Y12229 M.musculus	X83506 M.musculus	Absbus Sequence / AR281528 Sequence	AX107972 Sequence	AX538583 Sequence	X69086 H.Sapiens m A63607 Sequence 9	AR281529 Sequence	AF195788 Rattus no	Ariss/8/ Raccus 110 U43519 Human dystr	AX552248 Sequence	BC009242 Homo sapı AX817318 Sequence		TAGE TAGE TAGES	100111				ведиепсев	(ns)
DB ID	4	6 AX538621	6 AX538619 6 AR304538	6 AX114289	6 AX538622	6 AX538624 / 6 AX538627	9 HSDMDR	6 AX409637	6 AASJESEL 9 HUMDYS	6 AR220819	6 E30219 6 E30220	4 AF070485	6 AX306153 6 AX538582	10 MUSDYSA	6 AR093392 6 AR142592	5 GGDYS	6 E30221 5 FSCDYSTRO	E30218	10 MUSDYS 6 E30223	5 AF339031	10 RNAJ2967 6 axeaerea	10 MMY12229	MMGUTRP	A63605 AR28152		AX53858		AR28152	AF1957	AF19578 HSI143519	AX55224	9 BC009242 6 AX817318	ALIGNMENTS	444	2339 DP DNA Patent WO0229056.	271166	##	000.	nd Harper, S.Q. cleic acid and peptide	-A 40 11-APR-2002; UNIVERSITY OF MICHIGAN
% Query re Match Length	4 83.8 53	29 77.5 54	6 76.7 54 8 63.2 59	8 63.2 59	8 63.2 86	8 63.2 114 8 63.2 114	8 63.2 124	63.2 139	8 63.2 139	8 62.7 139	6 57.0 44	4 56.4 138	6 54.7 138 6 54.7 138	6 54.7 138	6 54.7 193 6 54.7 193	2 43.9 135	8 34.2 40	2 31.8 37	8 30.0 32	2 28.5 35	26.4 107	2 26.4 110	54 26.4 31	4 26.1 60	4 26.1 60	4 26.1 103	26.1 103	.4 26.1 103	.4 25.1 30	.4 25.1 31 4 25.1 31	.4 25.1 51	.6 24.5 1481 05 24.0 2005			Sequence 40 from F	AX538620 AX538620.1 GI:252	synthetic construct synthetic construct	artificial sequence 1	Chamberlain, J.S. a Mini-dystrophin nu	Patent: WO 0229056 THE REGENTS OF THE
Result No. Scor	1 1760	16	1428	1328	1328	1328	1328	0 1328	1328	3 1317	13	6 1185	7 1149	9 1149	0 1149	22 922	3 718	5 667	629	8 538	0.00	1 554	2 2	3 547	5 547	6 547	7 547 R 547	547	0 528	1 528	3 527	-H IO		RESULT 1 AX538620			SOURCE		UTHORS	7

	1006 GGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGGCTGCCTCCTGAGGAGGCCCAA	2179	2239 GAACCTGCACTCCGCTGACTGGCAGAAAAATGAAATGAA	1186 ACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGGTGCGCCAAGCTGAGGGGTGATCAAGGGGCTGAGGGGGATGAGGGGGGGG	1246 ATCCTGGCAGCCGTGGGCATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGT	1306 CAAGGCACTICGAGGAGAAATIGGGGCCICTGAAAGAAGAAGGGGAGCAACGAATGACCACCATGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGA	1305 1901109CCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGA	1426 AGACCTGAACACCAATGGAAGCTTCTGCAGGTGGCCGTCGAGGACGAGTCAGGAACCT 	1486 GCATGAAGCCCACAGGAGTTTGGTCCAGCATCTCAGCACTTTCCACGTCTGTCCACAGTCTGCACAGTCTGTTCCAGGAAGTTTGGTCCAGCATCTCAGCACTTTCTTT	1546 GGGTCCCTGGGAGAGGCATCTCGCCAAACAAGTGCCCTACTATATCAACCAGGAGAC	OY 1606 TCAAACAACTIGGGAACCAICCCAAAATGACAGAGTCTACCAGTCTTTAGTGACT 1665		QY 1726 CCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCAGCACCT 1785			QY 1906 TCTGAACTGGCTGCTGAATGTTTATGATACGGGACGGACG	Qy 1966 TITTAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCT 2025	
			·															
RES Location/Qualifiers 5339	y Match Local Similan hes 1910; Cor	1 GAGCTATGCCTACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60	61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120	121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAATTATCGTGGCTTCTTTC 180	181 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240 	241 CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300	301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420	421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 480	GAAAGATTGAATGACTGGCTAACAAAAACAGAAGAACAACAACGAAGGAAATGGAGGAGGA 5	1 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 6	1 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCTC	1 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACT	9 TAAGATAACATGAAGTCGATGAGCAAACATCTGTAGATGGACAGAGCCGCTGGGT 9 TAAGGTATTGGAGAGAGTCGATGGCAAACATCTGTAGATGGACAGAAGAGTCGCTGGGT 1	6 TCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCT	6 GGTGTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCA	886 TCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAA 9	
SEATURES SOU)RIGIN Quer Best Mato	≿ ā	ž á	& Q	≿ a	≱ ë	ÿ. ð	ኢ ዊ	≽ &	≿ &	≿ &	≯ 4	≯ ≿	9 ≿ A	≿ &	≿ &	} ≿	

Page 3

455	TCAAGACCTAAGAAAATCCTGAAGACCCCAAGAAGTTTTCTCTCACTCTGAAACAAAAATCCTGAAACATTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTGAAACATCTAAACAACATTGAAACATCTAAACAACATTGAAACATCTAAACAACATTGAAACATCTAAACAACATTGAAACATCTAAACAACATTGAAACATCTAAACAACATTAAAAAAAA
8 8 8 8	8 4 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
b 3079 TTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCT 3138 Y 2026 TTTCAAGCAAGTGCCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGCCTCCTTCT 2085	MASSES M

```
8 8
                                                                                            ò
                                                                                                                  g
                                                                                                                                                ઠે
                                                                                                                                                                       ద
                                                                                                                                                                                                   \dot{\delta}
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                            요
                                                                                                                                                                                                                                                                                                        \dot{\delta}
                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
2899 CCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAA 2958
                                                                                                                                                                                                                                                                                                                                         3079 TTATGACCGCCTGGAGGAAGAGCACAACTTTGGTCAACGTCCCTCTCTGCGTGGATAT 3138
                                                     CCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGA 1602
                                                                            2779 CCAGGGTCCCTGGGAGAGGCCATCTCGCCAACAAAGTGCCCTACTATATCAACCACGA 2838
                                                                                                        GACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGGGTCTACCAGTCTTTAGCTGA 1662
                                                                                                                                  GACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGA 2898
                                                                                                                                                            CCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGGAAGACTGCAGAA 1722
                                                                                                                                                                                                                GGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAA 1782
                                                                                                                                                                                                                                        2959 GGCCCTTTGCTTGGATCTCTTGAGCCTGTGAGCTGCATGTGATGCCTTGGACCAGCAAA 3018
                                                                                                                                                                                                                                                                    CCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTAT 1842
                                                                                                                                                                                                                                                                                           ccrcaagcaaaarcaccaacccarddararccrdcadarrarraarrgrraaccacrar 3078
                                                                                                                                                                                                                                                                                                                      TTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATAT 1902
                                                                                                                                                                                                                                                                                                                                                                          GTGTCTGAACTGGCTGCTGAATGTTAATGATACGGGACGAACAGGGAGGATCCGTGTCCT 1962
                                                                                                                                                                                                                                                                                                                                                                                                  GTGTCTGAACTGGCTGCTGAATGTTTAAGATACGGGACGAACAGGGAGGATCCGTGTCCT 3198
                                                                                                                                                                                                                                                                                                                                                                                                                             1963 GTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGGTA 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3199 GTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATA 3258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3259 CCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCAGGCTGGGCCTCCT 3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTITICAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3319 rerdeardarreraredaa 3337
                                                     1543
                                                                                                        1603
                                                                                                                                  2839
                                                                                                                                                                                                                1723
                                                                                                                                                                                                                                                                  1783
                                                                                                                                                                                                                                                                                            3019
                                                                                                                                                                                                                                                                                                                      1843
                                                                                                                                                                                                                                                                                                                                                                          1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2083
                                                                                                                                                             1663
                                                                                                                                                                                                                                                                                                                                                                                                     3139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2023
₹ 8
                                            ≿
                                                                        ਖ਼ ≯ ਖ਼
                                                                                                                                                         ⋩
                                                                                                                                                                              g
                                                                                                                                                                                                             ≱ સ
                                                                                                                                                                                                                                                               ≈
                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                         ⋩
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                         ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ል
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
```

```
RESULT 3
AX538619
LOCUS
LOCUS
DEFINITION Sequence 39 from Patent W00229056.
DEFINITION Sequence 39 from Patent W00229056.
DEFINITION AX538619
VERSION AX538619.
VERSION AX538619.
ORGANISM AX538619.
SOURCE SYNTHETIC CONSTRUCT
ORGANISM ARTIFICIAL SEQUENCES.
SOURCE CONSTRUCT
AUTHORS CHAMPOLIC CONSTRUCT
AUTHORS CHAMPOLIC AGIG and peptide Sequences
AUTHORS CHAMPOLIC AGIG and PAPPE. S.O.
TILLE JOURNAL PATENTY OF MICHIGAN (US)
FEATURES
SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM SOURCE / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM / MOGRANISM /
```

ω .

Gaps

1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT

76.7%; Score 1611.6; DB 6; Length 5417; 85.3%; Pred. No. 0; Alswatches 229; Indels 93;

Query Match Best Local Similarity 85.3% Matches 1872; Conservative

8

```
1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1459 AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCCTCAGGTAGC 1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1758
                                                                                                                                                                             1159 rccrrcacagcarrrdgaagcrccrgaadacaagrcarrrcgcagrrcarrgargagag 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1279 TGCTGAGGACACATTGCAAGCACAAGAAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ccagrircaracreargagggracargarggarringacagecearcaggecegering 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1579 GАААДБАГТGААТGАСТGGСТААСАААААСБАБАААДGАААGGAAAATGGAGGAAAGA 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1759 TGATGAATCTAGTGGAGATCACGCAACTGCTTGGAAGAACAACTTAAGGTATTGGG 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1819 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1939 AAAAGAAGATGCAGTGAACAAGATTCACACAGCTTTAAAGATCAAAATGAAATGTT 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGAATATTTAGTCCAAAA 2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               999
                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGACAG 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841 GAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901 GCAGAACGATGTACATAGGGCC--TTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATC 958
                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                           1219 IGAAGTAAACCIGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGIGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                    181 TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421 TAGCATGGAAAAACCAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1519 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAAGGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781 TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         959 ATGAGTACTCTTGAGACTGTACGAATATTT-----CTGACAGAGCAGCCTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gegcaaacherarreacheaacaacherrrrraacacheaagaaraacheac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1339
                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
```

RESULT 4 AR304538 LOCUS LOCUS DEFINITION Sequence 1 from patent US 6544786. ACCESSION AR304538 VERSION AR304538 VERSION AR304538.1 GI:31693691 KEYWORDS UNKNOWN. ORGANISM UNKNOWN. ORGANISM WEATHORS XIAO.X. and Liu.P.X. TITLE Method and vector for producing and transferring trans-spliced DOURNAL DOURNAL LOCATION/QUalifiers 1 (10.5952) AUTHORS LOCATION/QUalifiers 1 LOCATION/QUalifiers 1 SOURCE 1 COCATION/QUalifiers 1 SOURCE 1 COCATION/QUALIFIERS 1 SOURCE 1 COCATION/QUALIFIERS 1 SOURCE 1 COCATION/QUALIFIERS 1 COCATION/QUALIFIE	Query Match	0y 1122 AATTGAACCTGCACTCGCTGACAGAAAATAGATGAGACCCTTGAAAGACCTC 1181 1182 AATTGAACCTGCACTCGCTGGCAGAAAATAGAGAGACCCTTGAAGACCTCC 1181 1182 AAGTGAACCTCGGCTGGCAGAGAAAATAGACTGGCCAGACTGAAGACCTCC 1181 0y 1182 AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGGCCAAGCTGAGGTGATCA 1363 0y 1242 AGGAACTTCAAGAGGCCACGGATGAGCTGCACCTCCAAGCTGCGCCAAGCTGAGGTGATCA 3763 0y 1242 AGGAACCTGGCAGCCCTGGGGGGATCTCCTCCAAGATCACCTCCAAGATCACCTCGAGA 1301 0y 1302 AAGTCAAGGCACTTCGAGGAGAAATTGACCTCTCTCCCAAGATCACCTCGAGA 3823 0y 1362 AAGTCAAGGCACTTCGAGGAAAATTGCGCCTCTGAAGAACGTGAGCCACTCAATG 3883 0y 1362 AAGTCAAGGCACTTCGAGGAAAAATTGCGCCTCTGAAGAACGTGACCACTCAATG 3883 0y 1362 AACTTGCTCGCCACAGTTACCACTTTGGGCATTCACCGTTATAACCTCAACGACTCAACCACTCAACCACTCAACCACTCAACCACTCAACCACTCAACCACTCAACCACTCAACCACTCAACCACTCAACACACACACACACACACACACACACACACACACACAC
1111	CACCGTA 1 CACCGTA 2 CACCGTCA 1 CCGTCGA 1 CCGTCGA 1 CGTCTA 2 AGCACTT 1 AGCACTT 2 AGCACTT 2 AGCACTT 2 AGCACTT 3 TGCCCTA 2 TGCCCTA 2 TGAAACT 1 TGAAACT 2 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3 TGAAACT 3	CTTGGACCACCACCACCTCAAGCAAATGACCCACGACCATGGATATCTTAA 3 TTGTTTGACCACTATTTATGACCGCCTGGAGCACACACATTTGGTCACATTATTAA 3 TTGTTTGACCACTATTTATGACCGCCTGGAGCACACACATTTGGTCAACGTCCC 1 TTGTTTGACCACTATTTATGACCGCCTGGAGCACACACAATTTGGTCAACGTCCC 3 TCTCTGCGTGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGG 1 TCTCTGCGTGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGG 3 TCTCTGCGTGGATATGTGTCTTAAAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGG 3 TCTCTGCGTGGATATGTGTTTTAAAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGG 3 AGAGAACCAGTGCTTTTTAAAACTGGCATCATTTCCTGTGTAAAGCACATTTGGA 3 AGACAAGTACAGATACCTTTTTAAAACTGGCATCATTTCCTGTTGTAAAGCACATTTGGA 3 AGACAAGTACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGC 3 AGACAAGTACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGC 3 AGACAAGTACAGAACACAGATACTTTCAACCAAGTTCAACAGGATTTTGTGACCAGC 3 CAGGCTGGGCCTCCTTTTCAACAAGAATTCTATCCAA 2101 CAGGCTGGGCCTCCTTCTGCATGATTCTATCCAA 3292

Mon Apr

ORIGIN	Quer. Best	Matc	a & i	8 8 8	8 8 8	લે છે ત	8.8	3 & 3	g A	g &	음 강 음	ΩÞ	\$\frac{1}{6}\$\$ \$\frac{1}{6}\$\$ \$\frac{1}{6}\$\$ \$\frac{1}{6}\$\$ \$\frac{1}{6}\$\$ \$\frac{1}{6}\$\$\$ \$\frac{1}{6}\$\$\$ \$\frac{1}{6}\$	•
						 .					·			-
3944 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC 4003	1482 AGCTGCATGAAGCCCCACAGGAACTTTGGTCCAGCATCTCAGCACTTTCTTT	1542 TCCAGGGTCCCTGGGAGAGCCATCTCGCCAAAGAAGTGCCCTACTATATCAACCACG 1601 	1602 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG 1661	1662 ACCTGRATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 1721 	1722 AGGCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACGGCAGA 1781 	1782 ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTGACCACTA 1841 	1842 TITATGACCGCCTGGAGCAAGACACAACAATTGGTCAACGTCCCTCCTGCGTGGATA 1901 	1902 TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGAGGAGGATCGTGTCC 1961 	1962 TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 2021 	2022 ACCTITICAAGCAAGTGGCAAGTICAACAGGATTITGTGACCAGGGCAGGCTGGGCCTCC 2081	2082 TTCTGCATGATTCTATCCAA 2101 		BSULT 5 AX114289 AX114289 AX114289 AX114289 AX114289 AX114289 SEQUENCE From Patent W00129243. Innear PAT 11-MAY-2001 CCESSION	וואר במתרום סוססי יסרסי
ď	ў ä	و ≾	ة بخ	≱ a	ži qi	<u>۲</u> ۾	۲. d	λ. q.	χ; q:	ጅ 월	≱ ā)	"ESULT 5 "X114289 "OCUS "EFINITION "EXSION "EXSION "EXSION "EXSION "EXPORES "OURCE AUTHORS TITLE JOURNAL "EATURES "SOUTCE misc	•

```
1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1661
                                                                                                                                  ö
                                                                                                                                                                                                                                           3284 deroccaririgaadeccaericreaccaeresaacererecaecrirererecaesaa 3343
                                                                                                                                                                                                                                                                                                                            3464 CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC 3523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1122 AATTGAACCTGCACTCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCC 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1182 AGGNACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3704 AGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 3763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1242 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGA 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1302 AAGTCAAGGCACTTCGAGGAGAATTGCGCTCTGAAAGAGAAACGTGAGCCACGTCAATG 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3824 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG 3883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1362 ACCTIGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3884 ACCITGCICGCCAGCTIACCACTITGGGCATICAGCTCICACCGTATAACCTCAGCACTC 3943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1422 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC 1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3944 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGGTCAGGC 4003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4124 AGACTCAAACAACTIGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG 4183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1662 ACCIGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4184 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 4243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               942 CTAAAGAACCTGTAATGATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1002 CITTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAG 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1542 TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4064 rocaddoctecerdadadadadcareredecaaacaaagadeceraerarareaaceaed 4123
                                                                                                                                                                                                                                                                                               881
                                                                                                                                                                                         762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 821
                                                                                                                                                                                                                                                                                                                                                                                                           882 ACTITICCAGCAGITICAGAAGCAGAACGAIGITACAIAGGGCCTICAAGAGGGAATIGAAAA 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1062 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1602 AGACTCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                               0; Gaps
                                                                                 DB 6; Length 5952;
                                                                                                                               7; Indels
                                                                           ry Match 63.2%; Score 1328.8; t Local Similarity 99.5%; Pred. No. 0; ches 1333; Conservative 0; Mismatches
/note="S2 junction site"
```

Ω

```
3749
                                                                                                                                    1241
                                                                                                                                                                                                                                3869
                                                                                                                                                                                                                                                                                                                                                                                                                     4049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4529
                                                                                                                                                                                                  1301
                                                                                                                                                                                                                                                              1361
                                                                                                                                                                                                                                                                                            3929
                                                                                                                                                                                                                                                                                                                          1421
                                                                                                                                                                                                                                                                                                                                                                                     1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4649
                                  3630 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                           3870 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                             ACCTTGCTCGCCAGCTTACCACTTTGAGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4170 AGACTICAAACAACTTGCTGGGACCATCCCAAAATGACAGGGCTCTACCAGGCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4230 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTATGACCGCCTGGAGCAAAGAGCACAACTTTGGTCAACGTCCCTCTTGCGTGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITATGACCCCTGGAGCAGAACAACTTTGGTCAACGTCCCTCTCTGCGTGGATA
                                                                                                                                    AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA
                                                                                                                                                        AGGAACTICAAGAGCCACGGATGAGCTGGCTCCAAGCTGCGCCAAGCTGAGTGATCA
                                                                                                                                                                                                                                                            AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCAGGGTCCCTGGGAGAGAGACATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGCCCTTTGCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTCAAGCAAAATGACCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4350 ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4470 renercheachechechearerrangaraceseaceaacaesearecererce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCITITCAAGCAAGTGGCAAGTICAACAGGATITIGIGACCAGCGCAGGCIGGGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                  AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA
                                                                                                                                                                                                                              3810 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGA
                                                                                                                                                                                                                                                                                                                          ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                         TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                3990 TGGAAGACCTGAACACAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                     4110 recadederecerdedadadadecareredecaracaraceceracerararearecade
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4290 AGGCCCTTTGCTTGGATCTCTTTGAGCCTGTTGCATGTGATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC
                                                                            AATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TICIGCALGALICIALCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4650 ricrecardaricrarccaa 4669
                                                                                                                                    1182
                                                                                                                                                                    3750
                                                                                                                                                                                                    1242
                                                                                                                                                                                                                                                              1302
                                                                                                                                                                                                                                                                                                                           1362
                                                                                                                                                                                                                                                                                                                                                         3930
                                                                                                                                                                                                                                                                                                                                                                                         1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2082
                1062
                                                                         1122
                                                                                                  g
                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                   8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ੋਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \dot{\delta}
                                    셤
                                                                       ò
                                                                                                                                    ò
                                                                                                                                                             ద
                                                                                                                                                                                                  à
                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                           4363
                                                                                                                                                                                   4483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTITCCAGCAGITCAGAAGCAGAACGAIGIACAIAGGGCCCTICAAGAGGGAAITGAAAA 3509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTAAAGAACCIGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC 1961
                                                                                                                                                                                                                   2021
                                                                                                                                                                                                                                     TGTCTTTTAAAACTGGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 4543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    craaagaaccreraarcargagracrerrgagacreracgaararrrergacagagdagc 3569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAG 1061
                                                                                         TTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 1901
                                                                                                             TITATGACCGCCTGGAGCAAGAACAACAATTTGGTCAACGTCCCTCTGCGTGGATA 4423
                                                                                                                                                                                                                                                                              ACCITITICAAGCAAGTGGCAAGTICAACAGGATTITIGTGACCAGGGCAGGCTGGGCCTCC 2081
                                                                                                                                                                                                                                                                                               ACCTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCCTCC 4603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 3389
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PAT 23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTITICCAGCAGITCAGAAGCAGAACGAIGTACATAGGGCCTTCAAGAGGGAATTGAAAA 941
                                                ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTATTGTTTGACCACTA
                                                                                                                                                                                   TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 6; Length 8689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 42 11-APR-2002;
THE RECENTS OF THE UNIVERSITY OF MICHIGAN (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .8689
/organism="synthetic construct"
/mol_type="unassigned DNA"
/db_xref="taxon:32630"
/noTe="Synthetic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1328.8; ; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8689 bp
WO0229056.
                                                                                                                                                                                                                                                                                                                                                                TTCTGCATGATTCTATCCAA 4623
                                                                                                                                                                                                                                                                                                                                            TICTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AX538622
Sequence 42 from Patent
AX538622
AX538622.1 GI:25271171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 99.5%;
Matches 1333; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               synthetic construct
synthetic construct
artificial sequences.
                                                          4304
                                                                                         1842
                                                                                                                     4364
                                                                                                                                                   1902
                                                                                                                                                                                   4424
                                                                                                                                                                                                                                             4484
                                                                                                                                                                                                                                                                              2022
                                                                                                                                                                                                                                                                                                            4544
                                                                                                                                                                                                                                                                                                                                          2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3570
                            1782
                                                                                                                                                                                                                   1962
                                                                                                                                                                                                                                                                                                                                                                        4604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      942
                                                                                                                                                                                                                                                                                                                                                                                                                     ESULT 6
X538622
DCUS
EFINITION
CCESSION
ERSION
EYWORDS
DURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EATURES
```

RIGIN

```
6923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1781
6744 IGGAAGACCTGAACACAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGGACTAGAGC 6803
                                                                            6924 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG 6983
                                                                                                                                                                                                                                                                                                                                                                           1662 ACCIGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1542 TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG 1601
                                                                                                                                                                                                                                                                            1602 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTG 1661
                                                                                                                                                                                                                                                                                                                                                                                                                            6984 Accreantantercadarrectedeérráradadacrecenteaacreceaadacrecada 7043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7044 AGGCCCTTTGCTTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA 7103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1782 ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA 1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1842 ITTARGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGATA 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7164 TTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 7223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7224 TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC 7283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7284 TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 7343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2022 ACCTITICAAGCAAGTGGCAAGTICAACAGGATITIGIGACCAGGGCAGGCIGGGCCTCC 2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT 23-NOV-2002
                                                                                                                                                                                                                         6864 TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1722 AGGCCCTTTGCTTGGATCTCTTGAGCCTGTAGCTGCATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1902 IGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1328.8; DB 6; Length 12057; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chamberlain, J.S. and Harper, S.Q. Mini-dystrophin nucleic acid and peptide sequences Patent: WO 0229056-A 47 11-APR-2002, THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US) Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="synthetic construct"
/mol_type="unassigned DNA"
/mol_type="unassigned"
/noTe="Synthetic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12057 bp
Sequence 47 from Patent W00229056.
AX538627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2082 ITCTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7404 ricigcardariciarccaa 7423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX538627.1 GI:25271181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63.2%;
99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        synthetic construct artificial sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             synthetic construct
synthetic construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 8
AX538627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                  g
                                                                                                                                                                                à
                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6204 ACTITICAGCAGIICAGAAGCAGACGAIGIACAIAGGGCCIICAAGAGGGAAIIGAAAA 6263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTAAAGAACCIGTAATCAIGAGTACTCTIGAGACTGTACGAATATTTCTGACAGAGCAGC 6323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6324 CTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 6383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6384 cocasaariercaerceseerreracsaaascassersassesassereaaraercasses 6443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1122 AATTGAACCTGCACTCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCC 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6444 AATTGAACCTGCACTCCGCTGACTGGCAGAAAAAAAAGATGAGACCCCTTGAAAGACTCC 6503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1182 AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6564 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA 6623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1302 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6624 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTGAGCGTCACGTCAATG 6683
                                                                                 PAT 23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6084 GGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 6143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAG 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6504 AGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 6563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1242 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1362 ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6684 ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 6743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1422 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC 1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  882 ACTITICCAGCAGIICAGAAGCAAACGAIGIACAIAGGGGCCIICAAGAGGGGAAIIGAAAA 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 63.2%; Score 1328.8; DB 6; Length 11443; Best Local Similarity 99.5%; Pred. No. 0; Matches 1333; Conservative 0; Mismatches 7; Indels 0; (
                                                                                                                                                                                                                                                                                                     Chamberlain, J.S. and Harper, S.Q. Mini-trophin nucleic acid and peptide sequences Patent, SF NO 0229056-44 11-APR-2002, THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
1. .114ea*
/organism="synthetic construct"
/mol_type="unassigned DNa"
/db_xref="taxon:32630"
/nofe="Synthetic"
                                                                                      L1113 DD Sequence 44 from Patent W00229056.
AX538624
                                                                                                                                                  AX538624.1 GI:25271175
                                                                                                                                                                                                                              synthetic construct artificial sequences.
                                                                                                                                                                                                      synthetic construct
                                                                            AX538624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    942
                           ESULT 7
X538624
SCUS
EFINITION
CCESSION
ERSION
EYWORDS
JURCE
                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                               SFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                         EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RIGIN
```

≿ ŏ ≿ ŏ ≿ ъ ⋩ ဓ္ ⋩ a ⋧ g ઠ g ò 셤 g

ઠ

a Š g

ò

us-09-845-416-12_copy_900_3000.rge

QY 1842 TTTATGACCGCCTGGAGCAAGAATTTGGTCAACGTCCTCTCTGCGTGGATA 1901 Db 9678 TTTATGACCGCCTGGAGCAACAACTTTGGTCAACGTCCTCTCTCGGTGGATA 9737 QY 1902 TGTGTTGAACTGGTGGAAGGTTATGATACGGAGAGGAACGGGAACCGTGTCC 1961 QY 1962 TGTGTTTATAAACTGGTGAATGTTTATGATACGGAACGAAC	TITION Human mRNA for dystrophin. X14298 X14298 XI Garage I Gl:30845 Dmd gene; Duchenne muscular dystrophy; dyst Bmomo sapiens (human) AMISM Homo sapiens (human) Homo sapiens (human) Mammalia; Eutheria; Primates; Catarrhini; H EUKARYOTA; Metazoa; Chordata; Craniata; Ver Mammalia; Eutheria; Primates; Catarrhini; H ENCE I (bases I to 12446) Davies, K.E. Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human cDNA molecules coding for the Duc Two human con Entry in the Duc Two human con Entry in the Code in the Duc Two Homes continuity in the Duc Two human continuity in the Duc Two h	STITUTE STITUTE DUCIN, DUCE M18533 CDNA were located at x14298 pos. 496, 1772, 1965, 2449, 10-cation/Qualifiers Location/Qualifiers 1 .12446 Organism="Homo sapiens"
	AATTGAACTGCACTCGCTGACTGCAGAGAAAATAGATGAGACCCTTGAAGACTCC AATTGAACTTCACCTCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAGACTCC AAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAGACTCC AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCCCAAGCTCAGATCA AGGAACTTCAAGAGGCCACGGATGAGCTGCACCTCAAGCTGCCCAAGCTCAAGTCA AGGAACTTCAAGAGGCCACGGATGAGCTGCACCTCAAGCTCCCCAAGATCACA AGGAACTTCAAGAGGCCACGGATGAGCTGCACTTGACTCTCCTCCCAAGATCACACTCAAGATCAAAAAAAA	1422 TGGAAGACCTGAAACCAGATGGAAGCTTCTGCAGGTGGCCGTCGGGACTCGGGC 1481 9258 TGGAAGACCTGAAACCAGATGGAAGCTTCTGCAGTGCGTCGGGACTCGGGC 1481 1482 AGCTGCATGAACCAGAGCTTCTGCAGTGCAGTCCAGGACCGGACTCAGGC 9317 1542 AGCTGCATGAAGCACTTTGGTCCAGCATCTCAGCACTTTCTTT

ò

셤 ð 원 ò

SLTHWAYVDESSCHOLATALEER TRANSERFLEPULDLINGVOUGHEN VLAZELLEGUESVUN NO DLOGWATARELLING MET TAGE TRANSERFLEPULDLINGVOUGHEN VLAZELLEGUESVUN NO SLTHWAYVDESSCHOLATALEGUEVUN SLTHWAYVDESSCHOLATALEGUEVUN SCHLESARLSEKEDAVNKIHTTGFKOONEMLS SLOKLAVLKADLEKKKOSEMGKLYSIK ODLLE TLAKREY VORTERRATAGLSCHATTOPELTOTTVAM PET TAKREY VORTERREY ALGENTTOTTVAM ET TYTTYTFREDYN ITELESAR TAGESCHATTOPELTOTTVAM ET TYTTYTTRESPETAL FROLEGUESKUN ALGESKUNG THE TRANSPORTER TRANSER GEORIT VEGNYN BET TRANSPORTER TRANSPOR I EPRYDSTREAMMANHODICR KILTER LEAT CHARLE TANDER AND TRANSPORMED TO CHARLE TERRORAGE TO CHARLE THE STATE OF THE TRANSPORMED TO CHARLE TO CHARLE THE STATE OF THE TRANSPORMED THE CHARLE TO CHARLE THE CHARLE CHARLE THE CHAR KQPDILAPGILTIGAS PTQTVTLVTQPVVTKETAISKIEMPSSLMIEVPALADFNRAWT
ELTDWLSALDQVIKSORNWGDLEDINEMI IKQKATMQDIEGRRPQLEELITAAQNIK
WYENGASTIITDRIERI ONOWDENGEVOEHLONRROQLINEMLKOSTQWLEAKEBAEGYU
GQARAKLESWKEGPYTVDAIQKKITETKQLAKOLROWGINUVDVANDLALKLIEDYSAD
DTRKVHMITENINASWRS IHKRVSERRAALEBTHRILQQPPLDLEKFLAMLTEAETTA EPRELPPEERAQNYTRLIRKQAEBYNTEWEKINLHAADWORKIDETLERLOELGAATD ELDLKLRQAEVIKGSWQPVGDLLIDSLODHLEKYKALRGEIAPLKENVSHYNDIAROL TTIGIQLSPYNLSTLEDLNTRWKLLQVAVEDRYRQLHEAHRDFGPASQHFLSTSVQGP WERAISPNKVPYYINHETÇITCWDHPKYTELYQSLADLINNYRFSAYRTAMKIRRLOKA LCLDLLSLSAACDALDQHNLKQNDQPMDILQIINCITTIYDRLEQEHNNLVNVPLCVD MCLNWLLNVYDTGRIGRIRVLSFKTGIISLCKAHLEDKYRYLFKQVASSTGFCDQRRL NVLQDATRKERLLEDSKGVKELMKQWQDLQGEIBAHTDVYHNLDENSQKILRSLEGSD DAVILORRLDNYMFKWSELRKKSLNIRSHLEASSDQWKRLHLSLQELLVWLQLKDDEL SRQAPIGGDFPAVQKQNDVHRAFKRELKTKEFVIMSTLETVRIFLTEQPLEGLEKLYQ GLILHDSIQIPRQLGEVASFGGSNIEPSVRSCPQFANNKPEIBAÀLFLDWMRLEPQSM VWLPVLHRVAAAETAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFPSGRVAKGH DEHLLIQHYCQSLNQDSPLSQPRSPAQILISLESEERGELERILADLEEENRNLQAEY DRLKQQHEHKGLSPLPSPPERMPFSPSQBRDABELIARHKGRLEARHYGILEDH NKQLESQLHRLLGULEQPQAEAKVNGTTVSSPSTSLQRSDSSQPMLLRVVGSQTSDSM GESDLLSPPQDTSTGLEEVMEQLNNSFPSSRGRNTPGKPMREDTM" VWLPVLHRVAAAETAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFFSGRVAKGH KMHYPMVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLFVQTVLEGDNMET PVDSAPASSPQLSHDDTHSRIEHYASRLAEMENSNGSYLNDSISPNESID

ઠે

8488 GGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 8547 rrcridgirgicarachadarakangangannaadccdccaddcharrddaggcd 8607 762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 821 882 ACTITICCAGCAGITICAGAAGCAGACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAA 941 0; Gaps Query Match 63.2%; Score 1328.8; DB 9; Length 12446; Best Local Similarity 99.5%; Pred. No. 0; Matches 1333; Conservative 0; Mismatches 7; Indels 0; C 822 8548 DRIGIN

g

à

à 음 à

942	ACTOTTGAGACTGTACGAATATTTCTGACAGAGCAGC 100
1002	GAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGGG 10
1062	CGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA 112
1122	ACTCC 118
1182	ACTTCBAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 124
1242	GTGGGCGATCTCCTC
1302	TCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG 136
1362	GCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 142
1422	AGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC 148
1482	HCTG 154
1542	GOTCCCTGGGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACG 160
1602	TECTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGCTG 16
1662 9388	TCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 172
1722	CCTTTGCTTGGATCTCTTGAGCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA 178
1782	GGAAATGACCAGCCATGGATATCCTGGAGATTATTAATTGATTG
1842	AAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 190
1902	TGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC 19
1962	TAAAACTGGGATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 202

셤 ò à

셤 ઠ ò

```
1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2081
                                                                                                                                                                                                                                      9437
                                                                                                                                                                                                                                                                                        9497
                                                                                                                                                                                                                                                                                                                   1721
                                                                                                                                                                                                                                                                                                                                             9557
                                                                                                                                                                                                                                                                                                                                                                      1781
                                                                                                                                                                                                                                                                                                                                                                                              9617
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2021
                                                                                                     1481
                                                                                                                              9317
                                                                                                                                                                                                            1601
                                                                                                                                                                                                                                                               1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTATGACCGCCTGGAGCAAGAACAATTTGGTCAACGTCCCTCTGCGTGGATA 1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-NOV-2002
                                                 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGAGGATCCGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9738 TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGAGGAACAGGGAGGATCGTGTCC
                                                                                                                      TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                1602 AGACTCAAACTTGCTGGGACCATCCCCAAAATGACAGAGCTCTACCAGTCTTAAGCTG
                                                                                                                                                                                                                                                                                   1662 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                   9498 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                                                      AGGCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA
                                                                                                                                                                                                                                                                                                                                                                                        ACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                            9678 TTTATGACCGCCTGGAGCAGAGAGACACAATTTGGTCAACGTCCCTCTGCGTGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT
AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATG
            ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                          Accirideriededaderraceaerrraddearreaderereaedaraaaerreadaere
                                                                                                     TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                         PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1
Chamberlain, J.S. and Harper, S.Q.
Parterophin nucleic acid and peptide sequences
Patent: WO 0229056-A 1 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13957 bp
Sequence 1 from Patent W00229056.
AX538581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TICTGCATGATICTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCTGCATGATTCTATCCAA 9937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AX538581.1 GI:25271086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2082
                             9138
                                                                                                                                                                                                                1542
                                                                                                                                                                                                                                                                                              9438
                                                                                                                                                                                                                                                                                                                                                                            1722
                                                                                                                                                                                                                                                                                                                                                                                                                                1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                         9618
                                                        1362
                                                                                9198
                                                                                                           1422
                                                                                                                                                              1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11.
AX538581
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                            8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \overset{\circ}{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                상
음
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                         g
                                              8
                                                                         a
                                                                                                        ò
                                                                                                                             d
                                                                                                                                                           ò
                                                                                                                                                                                    8
                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCC 9017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCA 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8777
                                                                                                                                                    PAT 14-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gercccarringsaaeccaerrcreaccaereaaecererecercrecaccrintricrecaesaac 8657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   881
                                                                                                                                                                                                                                             Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTGGAAGGACTAGAAACTCTACCAGGAGCCCCAGAGAGCTGCCTCCTGAGGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rrcregigirescratadacreandarearearrandecegecegeagecratarregaege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTITICCAGCAGITICAGAAGCAGAACGAIGITACAIAGGGCCTICAAGAGGGGAAITIGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2022 ACCITITICAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 63.2%; Score 1328.8; DB 6; Length 13957; Best Local Similarity 99.5%; Pred. No. 0; Matches 1333; Conservative 0; Mismatches 7; Indels 0;
                                                                                                                                                                                                                                                                                 Alvares,C., Horne,D., Peres-da-Silva,S. and Vockley,J.G. Gene expression profiles in liver cancer Patent: NO 0229103-A 2284 11-APR-2002; GENE LOGIC INC (US)
                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
1. .13957
Anol_type="unassigned DNA"
/db_xref="taxsigned DNA"
/db_xref="taxon:9606"
/noTe="EMBL/GenBank Accession No. M18533"
                                                                                                                                                    linear
                                                                                                                                              13957 bp DP Sequence 2284 from Patent WO0229103. AX409637
                                                         TTCTGCATGATTCTATCCAA 2101
                                                                                   rrcrccardaricrarccaa 9827
                                                                                                                                                                                             AX409637.1 GI:21442342
                                                                                                                                                                                                                     Homo sapiens (human)
                                                                                                                                                                                                                                   sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9078
                                   9748
                                                            2082
                                                                                      98086
                                                                                                                                                    CUS
FINITION
CESSION
RSION
YWORDS
URCE
                                                                                                                                                                                                                                                                       FERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                           ATURES
```

SIGIN

9797 2021

1841

1901 9737 1961

```
Homo sapiens (human)
Homo sapiens
Bukaryota, Metazoa; Chordata; Craniata, Vertebrata; Buteleostomi,
Bukaryota, Metazoa; Chordate; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1699)
Koenig, M., Hoffman, B.P., Bertelson, C.J., Monaco, A.P., Feener, C. and
Kunkel, L.M.
Complete cloning of the Duchenne muscular dystrophy (DMD) cDNA and
preliminary genomic organization of the DMD gene in normal and
affected individuals
affected individuals
61273512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            On May 25, 2000 this sequence version replaced gi:340693.

Draft entry and computer-readable sequence kindly provided by
Knosnig, 01-APR-1988 The severity of muscular dystrophy is
determined by the size of the deleted DNA segment. Deletions found
in different patients were from positions 302-2200, 473-1168,
1691-1810, and 1169-3011.

Location/Qualifiers
1. 13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRI 25-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1678 to 3830)
Hoffman, E.P., Monaco, A.P., Feener, C.C. and Kunkel, L.M.
Conservation of the Duchenne muscular dystrophy gene in mice and
                                                                                                                                                                                                                                                                   rerercreaacreecrecreaarerrrarearaceeseaceaacaeeseaesarecererec
9498 ACCIGAAIAAIGICAGAIICICAGCIIAIAAGGACIGCCAIGAAACICCGAAGACIGCAGA
                                                                                                                                                                                             9678 TTTATGACCGCCTGGAGCAAGAACAACTTTGGTCAACGTCCCTCTCTGCGTGATA
                                                                                                                                                                                                                                                                                                       TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT
                                                                                                                                                                                                                                                                                                                                  9798 İGİCİTİTAAAACIGGCAICATITCCCIGIGIAAAGCACATITIGGAAGACAAGIACAGAT
                                                                                                                                                                                                                                                                                                                                                                       ACCTITICAAGCAAGTGGGAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                         9558 AGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCGATGCACCTTGGACCAGCACA
                                                                                                    1782 ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                      9618 ACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTA
                                                                                                                                                                    TITATGACCGCCTGGAGCAAGAGCACAACTTTGGTCAACGTCCCTCTGCGTGGATA
                                                                                                                                                                                                                                      1902 TGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 (bases 1 to 13957)
Koenig,M., Monaco,A.P. and Kunkel,L.M.
The complete sequence of dystrophin predicts a rod-shaped cytoskeletal protein
Cell 53 (2), 219-226 (1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens dystrophin (DMD) mRNA, complete cds. M18533 M17154 M18026 M20250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Science 238 (4825), 347-350 (1987)
88018015
                                                                                                                                                                                                                                                                                                                                                                                                                                          TICTGCATGATTCTATCCAA 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rrcrecardarrcrarccaa 9937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       humans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360787
                                                                                                                                                                          1842 '
                                                                                                                                                                                                                                                                          9738
                                                                                                                                                                                                                                                                                                          1962
                                                                                                                                                                                                                                                                                                                                                                           2022
                                                                                                                                                                                                                                                                                                                                                                                                           9858
                                                                                                                                                                                                                                                                                                                                                                                                                                             2082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9918
                                         1722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HUMDYS
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                  셤
                                                                                                                                                                                               g
                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                  $ g
                                                                                             ₹
                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1001
                                                                                                                                                                                                                                                                                                                                                                                                                               8837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAACTICAAGAGGCCACGGAIGAGCIGGACCICCAAGCIGCGCCAAGCIGAGGIGAICA 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1242 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGA 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9078 AGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA 9137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1302 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGGTGAGCGCACGTCAATG 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9138 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGAAGTGAGCGTGAGCCACGTCAATG 9197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1422 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC 1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1602 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGCTG 1661
                                                                                                                                                                                                                            8657
                                                                                                                                                                                                                                                                                            8717
                                                                                                                                                                                                                                                                                                                                                             8777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITIGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGAGCTGCCTCCTGAGGAGAGAG 1061
                                                                                                                                                                                           821
                                                                                                                                                                                                                                                            881
                                                                                                                                                                                                                                                                                                                              941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9198 ACCTTGCCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9258 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACGAGGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1482 AGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCACGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9438 AGACTCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1662 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9018 AGGAACTTCAAGAGGCCACGGATGAGCTGGACTCAAGCTGCGCCAAGCTGAAGTGATGA
                                                                                                                                                                                                                                                                                   ACTITCCAGCAGITCAGAAGCAGAACGAIGIACATAGGGCCTTCAAGAGGAATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                      CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8958 AATTGAACCTGCACTCCCTTGACTGCCAGAAAAAAAAATAGATGAGACCCTTGAAAGACTCC
                                                                                                                                                                                          762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC
                                                                                                                                                                                                                            8598 Gercccaririgaaagccagricigaccagricagaagcgrcrgcaccriricicaggaac
                                                                                                                                                                                                                                                            ACTITICAGCAGITICAGAAGCAGAACGAIGITATAAGGGCCITICAAGAGGGAATIGAAAA
                                                                                                                                                                                                                                                                                                                                                                                               CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCAGAATGTCACTCCGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                             Gaps
                                                                                                                           Length 13957;
                                                                                                                                                           .;
0
                                                                                                                                                             Indels
                                                                                                                             DB 6;
                                                                                                                                                           7:
                                                                                                                         63.2%; Score 1328.8;
ilarity 99.5%; Pred. No. 0;
Conservative 0; Mismatches
                            1. .13957
/organism="Homo sapiens"
/mol_type="unassigned DNA"
/db xref="taxon:9606"
            Location/Qualifiers
                                                                                                                                           Similarity
                                                                                                                                             Best Local Simi
Matches 1333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1542
                                                                                                                                                                                                                                                                                                8658
                                                                                                                                                                                                                                                                                                                                882
                                                                                                                                                                                                                                                                                                                                                                8718
                                                                                                                                                                                                                                                                                                                                                                                                                                 8778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1362
                                                                                                                                                                                                                                                               822
                                                                                                                                                                                                                                                                                                                                                                                                  942
                                                                                                                               Query Match
Best Local (
                                source
            EATURES
                                                                                             RIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   હ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    બ્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ત્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                 ≿
                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                  ≿
                                                                                                                                                                                                                                                                                                                                                                পূ
                                                                                                                                                                                                                                                                                                                                                                                                  ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                 બ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ≿
```

gene

TTLGIQLŠPYNLSTLEDINTRWKLLQVAVEDRVRQLHEAHRDFGPASQHFLSTSVQGP WERAISPNKVPYYINHETQTTCWDHPKATELYQSLADLNNVRFSAYRTAWKLRRLQKA LCLDLLSLSAACDALDQHNLKQNDQPMDILQIINCLTTIYDRLEQEHNNLVNVPLCVD

MCLIMMLLINVYDTGRTGRIRVLSFKTGIISLCKAHLEDKYRYLFKÖVASSTGFCDORRL GLILHDSIQIPROLGEVASFGGSNIEPSVRSCFOPANNKPRIEAALFLDMMRLEPOSM

NVLQDATRKERLIEDSKGVKELMKQWQDLQGEIEAHTDVYHNLDENSQKILRSLEGSD
DAVLLQRRLDNMNFKWSELRKKSLNIRSHLEASSDQMKRLHLSLQELLVWLQLKDDEL
SRQAPIGGDFPAVQKQNDVHRAFKRELKTKSEPVIMSTLETVRIFLTEQPLEGLEKLYQ
EPRELPFERRAQNVTRLLKRQAEEVYTEWKKLNLHSADWQRKIDETLERLQELQBATD
ELDKLRQARVI KGSWQPVGDLJIDSLODHLERVKKLERFRAPIKENVSKYNDTARGL

```
KMHYPMVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLPVQTVLEGDNMET
PVTLINFWPVDSAPASSPQLSHDDTHSRIEHYASRLAEMENSNGSYLNDSISPNESID
PEHLLIGHVCOSLNQDSPLSGPRSPAGYLISBLESERGGELER TLADLEBENRNLQAEY
DRIKQCHKGLSFLPSPPEMMPTSPQSPRDAELIAEAKLLRGHKGRLEARMOILEDH
NKQLESQLHRLRQLLEQPQARAKNOTTVSSPSTSLQRSDSSQPMLLRVVGSGTSDSM
GEEDLLSPPQDTSTGLEEVMEQLNNSPPSSRGRNTPGKPREDTM"
                                                                                                                                                                                                                                                                                                                                       8717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8897
                                                                                                                                                                                                                                                                8598 GGTCCCATTIGGAAGCCAGTICTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAAC 8657
                                                                                                                                                                                                                                                                                                                                                                                                            8777
                                                                                                                                                                                                                                                                                                                                                                                                                                              1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1481
/WLPVLHRVAAABTAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFFSGRVAKGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8778 CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGC 8837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1182 AGGAACTICAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGAGGTGATCA 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1302 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGAACGTGAGCCACGTCAATG 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9497
                                                                                                                                                                                                                                                                                                                                                                           941
                                                                                                                                                                                                                             762 GGGTTCTTTTACAAGACAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTCTGCAGGAAC
                                                                                                                                                                                                                                                                                                                                                                       882 ACTITCCAGCAGITCAGAAGCAGAACGAIGTACATAGGGGCCTTCAAGAGGGAATTGAAAA
                                                                                                                                                                                                                                                                                                AGACTCAAACAACTIGCTGGGACCAICCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG
                                                                                                                                                                                                                                                                                                                                                                                              8718 ACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGGAATTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1002 CITIGGAAGGACTAGAGAAACICTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1062 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8898 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1122 AATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9018 AGGAACTICAAGAGGCCACGGAIGAGCIGGACCICAAGCIGCGCCAAGCIGAGGIGAICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9078 AGGGATCCTGGCAGCCGTGGGCATCTCCTCATTGACTCTCCCAAGATCACCTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9138 AAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTGAACGTGAGCCACGTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9198 accrrecrecedecrracearringescarreacricacerracerranderre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1242. AGGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1362 ACCTIGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                     63.2%; Score 1328.8; DB 9; Length 13957; 99.5%; Pred. No. 0; cive 0; Mismatches 7; Indels 0; G
                                                                                                                                                                          Best Local Similarity 99.5 Matches 1333; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9438
                                                                                                                                                          Query Match
                                                                                                                      ORIGIN
                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            입
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

OY 1002 CTTTGGAAGGACTAGAAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 10	QY 1062 CCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAA 11	OY 1122 AATTGAACCTGCACTGACTGGCAGAAAAAATAGATGAGACCCTTGAAAGACTCC 118	Oy 1182 AGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGGGCCAAGCTGAGGTGATCA 124	QY 1242 AGGANICCIGGCAGCCGTGGGCGANCTCCTCATTGACTCTCCCAAGAICACCTCGAGA 1301 Db 9078 AGGANICCIGGCAGCCGTGGGCGAICTCCTCATTGACTCTCCAAGAICACCTCGAGA 9137	Qy 1302 pagtcaaggcacttcgaggagaaaattgcgcctctgaaagagaacgtgagccacgtcaatg 13	Qy 1362 ACCTHGCTCGCCAGCTTACACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTC 14	Qy 1422 TGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCGTCGAGGTCGAGGTCAGGC 14	OY 1482 AGCTGCAGAGGCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTTT	1542 TCCAG 9378 TCCAG	QY 1602 AGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTG 1	QY 1662 ACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGA 1	OY 1722 AGGCCCTTTGGATCTTGAGCCTGTCAGCATGCATGAATGCCTTGGACCAGCACA I	QY 1782 ACCTCAAGCAAAATGACCAGGCCCATGGATATCCTGCAGATTATTAATTGTTGACCACTA 1	QY 1842 TITAIGACCGCCGGAGCAAGAACACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATA 1 	QY 1902 TGTGTCTGAACTGCTGAATGTTTATGATACGGACGAACAACAGGAGGATCCTGTCC 1	OY 1962 TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGAT 2 DD 9798 TGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGACAAGT	OY 2022 ACCITITAAGCAAGITGGGAAGITCAACAGGAITITGTGACCAGGGCAGGCI-GGGCCIC 2
				•							,						
1662 ACCTGAATAATGTCAGATTCTCAGCTTÄTAGGACTGCCATGAAACTCCGAAGACTGCCAGA 1721 04.00	AGGCCCTTTGCTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACA 17								MAZZOBIS AR220819 13977 bp DNA linear PAT 26-SEP-2002 DEFINITION Sequence 60 from patent US 6426186. GCESSFON AR220819 GT:23327696	Unknown. Unknown. Unclassified	REFERENCE 1 (bases 1 to 13977) AUTHORS Jones, K.A., Volkmuth, W. and Walker, M.G. TITLE Bone remodeling genes AUTHORS. 1711E Bone remodeling genes	Location/Qualifiers 1 13977 / organism="unknown" / mol type="denomic DNA"	8; DB 6; Length 13977;	onservative 0; Mismatches 7; Indels 1; Gaps TCTTTACAAGACAGTCTGACCAGTGGAAGCGTCTGCACCATTTCTCTGCAGGAAC 82	GGAAC 8	യ ത സ at—	8718 ACTITICAGGAGTICAGAAGCAAAGTACATATACATAGGGCCTICAAGAGGAATTGAAAA 8777 942 CTAAAGAACCTGTAATGAGTACTTTGAGACTGTAGGAATATTTGTGACAGGGAGC 1001

```
2087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2267
                                                                                                                                                                                                                                                                                                                                                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2027
                                                                                                                                                                                                                                                                                                                                             1804
                                                                                                                                                                                                                                                                                                                                                                   1020
                                                                                                                                                                                                                                                                                                                                                                                         1804
                                                                                                                                                                                                                                                                                                                                                                                                                                    1804
                                                                                                                                                              1804
                                                                                                                                                                                                          1804
                                                                                                                                                                                                                                                      1804
                                                                                                                                                                                                                                                                                                 1804
                                                                                                                  1754
                           1634
                                                                       1694
                                                                                                                                                                                                                               840
                                                                                                                                                                                                                                                                            900
                                                                                             099
                                                  909
                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 720
                                                                                                                                                                                                                                                                                                                                                                 961 GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2088 CACITIGGGCAIICAGCICICACCGTAIAACCICAGCACICIGGAAGACCIGAACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaacttragerccaecarctcaecactrrctrrccacercraccaegerccraegeaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2208 GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG
                                                                                                                                                                                                                                                                            841 GAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                             1021 ACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------AGGAGGTCAATACTGAGAGAAAATTGAACCTGCACTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1141 TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1848 TCACTGCCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1261 GGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1968 GGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1321 AGAAATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1018 AGABATTGCGCCTCTGAAAGAAGGTGGAGCCACGTCAATGACCTTGCTCGCCAGCTACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACTITIGGGCATICAGCICTCACCGIATAACCICAGCACTCTGGAAGACCTGAACACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1081 TCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAG
                                                                                                                                                                                                                                                                                                                       901 GCAGAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                       1635 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                              781 TTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGCTACAGCT
       GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAAAAAGAACAAGGAAAAATGGAGGAAAGA
                                                   GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAATAAGGTGCTTCA
                                                                                                                                                           1755 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1381 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                        1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1805
                               1575
                                                     541
                                                                                                                                                                                                                                                          1805
                                                                                                                                                                                                                                                                                                     1805
                                                                                                                                                                                                                                                                                                                                                 1805
                                                                                                                                                                                                                                                                                                                                                                                            1805
                                                                                                                                            661
                                                                                                                                                                                                             1805
          481
                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원 수 명
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8
                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                         원
장
명
                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                          8 8
                                                                       g
                                                                                              8 8
                                                                                                                                        $ B $
          8 8
                                                   ò
                                                                1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATIATICTACAATIGGGAAGTAAGCTGATIGGAACAGGAAAATTATCAGAAGATGAAGA 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      reaagraaaccreeaccerrarcaacaecrrraeaacaaraacaacrarrarcereecrrcrrrc 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTTCACAGCCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels 387;
                                                                                                                                                                                                                                                                                                                                                                                                                                Length 4402;
                                                                                                                                                                                                                                                                                                                          ce 1. .4402
/organism='Unidentified'
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
9
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 62.7%; Score 1317; DB Best Local Similarity 81.6%; Pred. No. 0; Matches 1714; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                              1. .4402
/organism="unidentified"
/mol_type="genomic DNA"
/db_xref="taxon:32644"
1455 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
             9918
                                            SULT 14
0219
CCS
FINITION
FEINITION
FESTON
FRSTON
TWORDS
URCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                      SATURES
                                                                                                                                                                                                                                                                                                                                                                                                            MIGIN
```

ORIGIN Query Match Query Match Best Local Similarity 78.3%; Score 1196.6; DB 6; Length 4402; Best Local Similarity 78.3%; Pred. No. 1.5e-289; Matches 1645; Conservative 0; Mismatches 69; Indels 387; Gaps 2; Qy GAGCTATGCCTACAGGGGTGCTTATGTCACCCTGACCCTACAGGAGCCCATT 60 Db 1095 GAGCTATGCCTACAGAGGTGCTTATGTCACCCTGACCCTACAGGAGCCCATT 1154	61 TCCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTTCATTGATGGAGAGG 1155 TCCTTCATTIGGAAGCTCCTGAAGACAAGTCATTIGGCAGTTCATTGATGGAGAG 121 TGAAGTAAACAGCTTATCAAAGAAGTTTAGAAGAAGAAGAATATTGCTGATGATGATGATGATGATGATGATGATGATGATGATGAT	1215	CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAGATGAAGA TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAGATGAAGA AACTGAAATTCTACAAGTGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAAGATGAAGA AACTGAAGTAACAAGAAGAAGATCCCTAAAATTCAAGAAAGTGCCCCAGGGTAGC		OY 481 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAACAAGGAACAAGGAAAATGGAGGAAGA 540	OY 541 GCCTCTTGGACCTGATCTTGAAGACCCTAAAACGCCAAGTACAACAACAAAAACAACAACAACAACAACAACAAAAACGCCAAGTACAACAACAAACA	. 661	OY 721 AGATCGATGGGCAAACATCTGTAGATGGACAGAGACGGCTGGGTTCTTTTACAAGACAG 780	1875 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTAGTGCATGGCTTTCAGA 193 841 GAAAGATGATAAAGCCGGCAGGCACCTATTGGAGGCGACTTTCAGCAGCACTTCCAGCAGTACAGAA 900	1935 AAAAGAAGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCAT 960 1950	Oy 961 GAGTACTCTTGAGGACTGTACGAATATTTCTGAAGGGGGGGG
	2388 CTCAGCTTATAGACTGCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT 1741 CTTGAGCCTGCTGCATGATGCCTTGGACCAGCACAACCTCCAAGCAAATGACCA 2488 CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAACCTCAAGCAAAATGACCA	1801 GCCCATGGATATCCTGCAGATTATTAATTGATCGCCTATTTATGACCGCCTGGAGGA	2568 AGAGCACAACAATITGGICCAACGICCCICIGCGIGGAIAIGIGICICGAACIGCICCI 2027 2y 1921 GAATGTTATGATACGGGACGAACAGGGAGGATCCGTGTCTTTAAAACTGGCAT 1980 3b 2628 GAATGTTATGATACGGAACAACAGGAGATCCGTGTCTTTTAAAACTGGCAT 2687 3y 1981 CATTTCCCTGTGTAAAGCACATTTGGAAGAACAAGTACAGATACCTTTTCAAGCAAG	2041 AAGTTCAACAGGATTTTGTGACCAGGGCGGGGCCTCCTTCTGCATGATTCTATCCA 2041 AAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCCTCCTTCTGCATGATTCTATCCA 2748 AAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTTTTTTGTCACCAGCGCAGGCTGGGCCTCCTTCTGCATGATTTTTTTT	-4 -4	#ESTLT 15 33020 30020 JOCUS JO	SOCIAL MINISTRATION OF A STATE OF	TITLE Shortened dystrophin JOURNAL Parent: 19 1999318467-A 3 24-NOV-1999; JOHNBL PARENT: 19 1999318467-A 3 24-NOV-1999; JOHNBNT OS Unidentified Dy JP 1999318467-A/3	FU 24 NOV-1353 PF 08-MAY-1998 UP 1998142134 PR SINICHI TAKEDA PC CLINIS/09, ASIK48/00, C12N15/00	CC Topology: Linear; FH Key Location/Qualifiers FT Source 1. 4402 FEATURES Location/Qualifiers Source 1. 4402	/organism="unidentified" /mol_type="genomic DNA" /db_xref="taxon:32644"

2101 A 2101 | | 2808 A 2808

2000 2001 A 2001 Db 2808 A 2808	1140 Search completed: April 5, 2004, 02:40:08 Job time : 5490.46 secs		1200	2000	1260	2000	1320 2027	1380 2087	1440 2147	1500 2207	1560	1620 2327	1680 2387	1740 2447	1800 2507	1860 2567	1920 2627	1980	2040 2747	2100
1021 ACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCT	1081 TCTACGAAAGCAGGCTGAGGGGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC 11.	2001	1141 TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC 12:	2001	1201 GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGT 12	2001 20	1261 GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG 13 2001TCTCGAGAAAGTCAAGGCACTTCGAGG 20	1321 AGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 13 2028 AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 20	1381 CACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAG 14 2088 CACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAG 21	1441 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG 15 2148 ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG	1501 GGACTITIGGICCAGCAICTCAGCACTITCTITCCACGICTGICCAGGGICCCTGGGAGAG 15 	1561 AGCCATCTGGCCAAACAAGGGCCCTACTATATCAACCAGGAGACTCAAACAACTTGCTG 16 	1621 GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATT 16 	1681 CTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCT 17 	1741 CTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACACACA	1801 GCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGCCTGGAGCA 18 	1861 AGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGATATGTGTCTGAACTGGCTGCT 19 	1921 GAATGITIAAGAIAGGGACGAACAGGAGGAGGATCCGIGICCIGICTITIAAAACIGGCAI 19 	1981 CATTICCCTGIGIAAAGCACAITIGGAAGACAAGTACAGATACCITITICAAGCAAGTGGC 20 	AAGTICAACAGGATTITIGIGACCAGGGCAGGGCTGGGGCCTCCTTCTGCATTCTATCCA

OM nucleic

Sun on:

```
Language Agencia, Marazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia, Butheria, Primates; Catarrhini, Hominidae, Homo.

1 (Asses I to 824)

1 (Asses I to 824)

1 (Asses I to 824)

1 (Asses I to 824)

2 (Asses I to 824)

3 (Asses I to 824)

4 (Asses I to 824)

4 (Asses I to 824)

5 (2011)

6 (2011)

7 (Annelished (2011)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

8 (Asses I to 8200)

9 (Asses I to 8200)

9 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

10 (Asses I to 8200)

11 (Asses I to 8200)

12 (Asses I to 8200)

13 (Asses I to 8200)

14 (Asses I to 8200)

15 (Asses I to 8200)

16 (Asses I to 8200)

17 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 8200)

18 (Asses I to 
CB991394 AGENCOURT
BG719710 602690430
AK081426 Mus muscu
AK081826 Mus muscu
AK081829 Mus muscu
AK075809 Mus muscu
AK075809 Mus muscu
AK075809 Mus muscu
CB667122 AGENCOURT
AX408546 Homo sapi
BB62984 BB62984
AX408546 Homo sapi
CD701871 BB610411
CD701871 BB610411
CD701871 BB710412
CD527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CB527785 UI M FY0-
CG59488 CS7286859
EX49086 D EXT28685
EX48574 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT28681
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EXT2861
EX49086 D EX4086
EX49086 D EX4086
EX49086 D EXT2861
EX49086 D EX4086
EX49086 D EXT2861
EX49086 D EXT2861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALSESA 1 Homo sapiens HELA CELLS COT 25-NORMALIZED Homo sapiens CEDNA CLORNALIZED Homo sapiens ALSESA 1 Homo Sapiens ALSESA 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                                                                                    BB610411
AD11871
AD11871
ABS27783
CB527783
CG554846
CG66947
CG66947
CG66947
BX488574
BX488574
BX74264
BR742665
CA988247
CA988247
CG606443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CG597965
CG664818
BB6613696
BD626491
CA888041
CA888041
CA8847144491
BY7144491
BY7144491
AL641565
CA864762
AA460476
                                                                                                                                                    CB960722
AY408546
BB629984
AY408548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AL871560
CA558919
                                                AK081426
    CB991394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL556247.2 GI:31278051
EST.
                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (human)
Homo sapiens
                                             RESULT 1
AL556247
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
         AL556247 AL556247
CD653550 AGENCOURT
BX365572 BX365572
BQ640063 he23g04.y
                                                                                                                                                    April 4, 2004, 16:52:43; Search time 2274.66 Seconds (without alignments) 17079.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                    1 cgactttccagcagttcaga.........ccggagctgcttccaatttg 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                                                                                                                                                                                                                                                                                                         55026578
                             GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                27513289 segs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                  US-09-845-416-10_COPY_1800_3100
1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CD653550
BX365572
BQ640063
                                                                                                                - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AL556247
                                                                                                                                                                                                                                                                                                                                IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em estba:*
em_esthum:*
em_esthum:*
em_esthum:*
em_estro::*
em_estro::*
em_estro::*
em_estro::*
gb_htc::*
gb_htc::*
gb_est1::*
gb_est2::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gss_inu::*
em_gs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Winimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             824
777
1098
620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESI:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 4 4 4
2 4 4 4 4
2 6 7 4 4
0 8 8 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fitle:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             584
583
582.4
573
```

Jatabase :

Result Š.

Searched:

N

```
/LONG)
// LONG | Long | Long | Long | Long |
// Long | Long | Laranscript enriched cDNA library (Genome Res. II: 153-1558 (2001). [PMD: 1154199] | From WAO! cell line | Undifferentiated human ES cell line WAO! |
// Long | Long | Long | Long | Long | Long | Long |
// Madison, Wi. cultured according to their instructions, on MEF feeders. They formed round colonies with defined edges and were positive for alkaline phosphatase, SSBA-4, OCT3, OCT4, WTF, TERY, GATA4, PDX1, NCAM, MSX1, FLD3, SSEA-1, TUBB3. NES, GFAP, and EOWES. When confluent (18-10 days after plating), the ES cells from 4 x Com dishes were treated with I mg/ml collagenase, type IV (Invitrogen. Protocol ref. Genome Res. II: 1553-1558 (2001). [PMD: 1154499]) Double-stranded cDNAs were synthesized with an Oligo (dT) primer [Invitrogen. Protocol ref. Genome Res. II: 1553-1558 (2001). [PMD: 1154499]) Double-stranded cDNAs were ligated to Lone-linker Li-Sal4, purified by phenol/chloroform extraction, and separated from free linkers by centration. The conna were amplified by long-range high fidelity PRK using Ex Taq polymerase (Takara) with a primer Sal4, purified by phenol/chloroform extraction and centrion-100 column. Then, the cDNAs were amplified by long-range high fidelity PRK using Ex Taq polymerase (Takara) with a primer Sal4. Sfor 25 cycles. The products were purified by phenol/chloroform extraction and centrion-100 column. The cDNAs were digested with Sal and NoII enzymes and cloned into Sal1/NoII site of sabout 3.6kb."
                                                                                                                            National Cancer Institute / NIH
Bldg. 31 Rm10AO7 Betheada, MD 20892
Email: ogapbe-r@mail.nih.gov
Tissue Procurement: Irene Ginis and Mahendra Rao, NIA
Tissue Procurement: Irene Ginis and Mahendra Rao, NIA
Tissue Procurement: Tree Ginis and Mahoru Ko
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL.)
DNA Sequencing by: Agencut Bioscience Corporation
Clone distribution: MGC c
can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: NDAMSI3 row: a column: 23
High quality sequence scop: 715.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cell_line="WAO1"
/lab_host="DH10B (T1 phage-resistant)"
/clone_lib="NIA Human H1 Embryonic Stem Cell cDNA Library
(Long)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         197 AGCTGACCTGAATAAAGTCAGAATCCCAGCTTATAGGACTGCCATGAAACTCCGAAGACT 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  137 CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGGTCTACCAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          778 AGCIGACCIGAAIAAIGICAGAIICICAGCITAIAGGACIGCCAIGAAACICCGAAGACI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      718 CCACGAGACTCAAACAACTIGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
   National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 777;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tissue type="Embryonic Stem cells" cell line="WA01"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 583; DB 14;
Pred. No. 1.2e-162;
0; Mismatches 1;
                                                                     Gerhard, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="mRNA"
/db_xref="taxon:9606"
/clone="IMAGE:30426742"
                                                                     Contact: Daniela S. Gerha:
Office of Cancer Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44.8%;
                                        Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       583; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 583; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         838
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                958 CACTATITATGACCGCCTGGAGCAAGAGCACAACAAITTGGTCAACGTCCCTCTCTGCGT 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGATATGTGTGTGTAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACACTTTGGAAGACAAGTA 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1138 CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCCTTCTGCATGCATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 18-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT 777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTT 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACTATITATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGT 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    778 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGGAAGACT 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTCATGGCTTGGACCA 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          315 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          495 GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGAGGCTGGG 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ccrccrrcracardarrcrarccaaarrccaadacagragagagagargaagragcarccrrraga 734
                                                          /mol type="mismo" reference /mol type="mismo" reference /mol type="mismo" reference /mol type="mismo" reference /mol type="mismo" reference /mol type="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismo" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference /mole="mismos" reference 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (human)
Homo sapiens
Homo sapiens
Eukaryote, Metasoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 777)
NIH-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CD653550
AGENCOURT_14553000 NIA Human H1 Embryonic Stem Cell cDNA Library (Long) Homo sapiens cDNA clone IMAGE:30426742 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 824;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GOGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 584; DB 9; Le
Pred. No. 6.1e-163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.9%; Score 584; DB
ilarity 100.0%; Pred. No. 6.1
Conservative 0; Mismatches
       1. .824
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CD653550.1 GI:31892067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Mac.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
CD653550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
```

ô

196

837

ŏ

ö

777

837

323

```
Wistow,G., Bernstein,S.L., Wyatt,M.K., Ray,S., Behal,A.,
Touchman,J.W., Bouffard,G., Smith,D. and Peterson,K.
Expressed sequence tag analysis of human retina for the NEIBank
Project: Retbindin, an abundant, novel retinal cDNA and alternative
splicing of other retina-preferred gene transcripts
Mol. Vis. 8 (4), 196-204 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BQ640063 620 bp mRNA linear BST 15-JUL-2002 he23g04.yl Human Retina cDNA (Un-normalized, unamplified): hd/he Homo sapiens cDNA clone he23g04 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1198 CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG 1257
                                                                                                                     204 CCACGAGACTCAAACTACTGCTGGGACCATCCCAAAATGACAGGGCTCTACCAGTCTTT 263
                                                                                                                                                                                                                                                         897
                                                                                                                                                                                                                                                                                                     324 GCAGAAGGCCCTTTGCTTGGKTCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA 383
                                                                                                                                                                                                                                                                                                                                                                                            443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 620)
                                                                                                                                                                                                   264 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1138 CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCTGGG
                                                                                                                                                                   778 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                           GCAGAAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                   898 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                            384 GCACAACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                           958 CACTATITATGACCGCCTGGAGCAAGAGCACAACTTTGGTCAACGTCCCTCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               444 CACTATITATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCTCTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1018 GGATATGTGTGTGTGAACTGGCTGCTGAATGTTTATGATACGGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               504 GGATATGTCTCTGAACTGGCTGCTGAATGTTATGATACGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1078 TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 624 cagaraccrirrcaagcaagragcaagricaacaggarrrrgrgaccagcgcaggcrggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      684 CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG
                                                                           CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                             Gaps
                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1258 GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   744 descasitascatrossecesasicosesecrectrocastric 787
                             IndelB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Section of Molecular Structure and Function National By Entitute 6/31, NIH, Bethesda, MD 20892-2740, USA Tel: 301 402 3452 Fax: 301 46 0078 Enail: graeme@helix.nih.gov Plate: 23 row: 9 column: 04
       Pred. No. 2.3e-162;
                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BQ640063.1 GI:21764522
    Similarity 99.8%; 33; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Wistow G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Moi. Vis.
22103461
12107411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3064006
                                                                                                                                                                                                                                                           838
                                                                           718
       Best Local
Matches 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 4
BQ640063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                           상 원
                                                                                                                                                                 à
                                                                                                                                                                                                   g
                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                             쉱
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                  ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                    1077
                                                                                                                                                                   1017
                                                                                                                                                                                                                                                                                                                                                1137
                                                                                                                                                                                                                                                                                                                                                                                                                                           1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BX365572 Homo sapiens HELA CELLS COT 25-NORMALIZED Homo sapiens CDNA clone CSODKOO1YB21 5-PRIME, mRNA sequence.
                             316
                                                                                                                  376
                                                                                                                                                                                                             436
                                                                                                                                                                                                                                                                                                     496
                                                                                                                                                                                                                                                                                                                                                                                            556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 919
                                                                           957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cell_type="HELA_CELLS COT 25-NORMALIZED"
/cell_the="HELA_CELLS COT 25-NORMALIZED"
/clone lib="HOMO sapiens HELA_CELLS COT 25-NORMALIZED"
/note="list strand cDNA was primed with a Not1-oligo(dT)
primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and ECOR V
sites of the pCMVSPORT 6 vector. Library was normalized."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                        GCAGAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                    GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                              CACTATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGT
                                                                                                                                                                                            377 CACTATITATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGGGT
                                                                                                                                                                                                                                                      GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAAGGGAGGATCCG
                                                                                                                                                                                                                                                                                        TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                          rerectioninaaaacrescarearineeergreraaaseeeerrinesaasacaasia
                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            617 cereciteratearierarecaaariecaaacaariessisaasiiseareciries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Genoscope Genorand de Sequencage Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - France BP 191 91006 EVRY cedex - France BP 191 91006 EVRY cedex - France Invitrogen Gergef@genoscope.cns.fr, Web : www.genoscope.cns.fr Library was constructed by Life Technologies, a division of Invitrogen. This sequence belongs to sequence cluster 1955.r Contact : Feng Liang Email : fliang@lifetech.com URL : http://fulllength.invitrogen.com/ InvitroGen Corporation 1600 Faraday Avenue Genoscope sequence ID : CSIAKO01ZB11QP1.
44.8%; Score 582.4; DB 13; Length 1098;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCNATTTG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Verte
Mammalia; Eutheria; Primates; Catarrhini; Hor
1 (bases 1 to 1098)
Li, W.B., Gruber, C., Jessee, J. and Polayes, D.
Full-length cDNA libraries and normalization
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organisma"Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="CSODK001YB21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BX365572.1 GI:30366927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BX365572
                                                                                                                317 (
                        257
                                                                                                                                                              958
                                                                      898
                                                                                                                                                                                                                                                      1018
                                                                                                                                                                                                                                                                                                                                              1078
                                                                                                                                                                                                                                                                                                                                                                                                                                        1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1258
                                                                                                                                                                                                                                                                                                                                                                                            497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ESULT 3
X365572
OCUS
EFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
OMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RIGIN
```

1137

623

1017

503

957

1077

563

1197

```
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  High quality sequence stop: 621.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="mRNA"
/db_xref="taxon:9606"
                                                                                                                                    CB991394.1 GI:30285818
                                                                                                                                                                                 Homo sapiens (human)
                                                                                                                                                                                                    ношо варіеня
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                LOCUS
                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                              ACCESSION
                                                                                                                                                         KEYWORDS
                        CB991394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                         /note="Organ: Eye, Vector: pSPORT1, Neural retina tissue was disserted from two 80 year old donors with no observed eye disease. 100ug of total RNA was used for library construction. A directionally cloned cDNA library in the pSPORT1 vector (Life Technologies) was constructed at Bioserve Biotechnology (Laurel MD) essentially following the protocols of the SuperScript Plasmid System ful clasticion manual (http://www.lifetech.com/). First strand synthesis was carried out using a Not). First
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1149 TCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCCTCCTTCTGC 1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCTT 1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1089 TIAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTT 1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1209 ATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGGCAGTAACA 1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            [S'-pGACTAGTTCTAGATCGCGAGCGGCCC(T)15-3']. EST analysis was performed on the unamplified library at the NIH Intramural Sequencing Center (NISC)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 ATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCCGAAGACTGCAGAAGGCCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481 ATGAITCTAICCAAATTCCAAGACAGTIGGGTGAAGTIGCAICCTIIGGGGGCAGIAACA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              729 AAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGA 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  789 ATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCC 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITGCIIGGAICICTIGAGCCIGICAGCIGCAIGIGAIGCCIIGGACCAGCACAACCICA 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 Triccirgearcrerraadecrereacrecareraarecrireaaccacacaacerea 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               909 AGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATG 968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 AGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 TGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCGGTGTCCTGTCTT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 TTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 TCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 AAACAACTIGCIGGGACCAICCCAAAATGACAGAGCICTAACCAGICTITAGCIGACCIGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                            /clone="he23go4"
/tissue_type="fetina"
/dev_stage="Adult"
/lab_host="EMDH10B"
/clone_lib="Human Retina cDNA (Un-normalized,
unamplified): hd/he"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
44.0%; Score 573; DB 13; Length 620;
Best Local Similarity 100.0%; Pred. No. 9.7e-160;
Matches 573; Conservative 0; Mismatches 0; Indels
Seq primer: M13RP1 reverse primer (ABI).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1269 TIGAGCCAAGIGICCGGAGCIGCTICCAATTIG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 TréAdchadretedeadchectrecaarrie 573
                                                                organism="Homo sapiens"
                                                                                    /mol_type="mRNA"
/db_xref="taxon:9606"
                Location/Qualifiers
1. .620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             primer-adapter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1029
                   EATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
Manualiar) Surfice of Health, Manualian Gene Collection (MGC) S NIH-MGC http://mgc.nci.nih.gov/.

S NIH-MGC http://mgc.nci.nih.gov/.

L Moublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: Gapber 5manial. nih.gov
Tissue Procurement: Dr. Stefan Hansson
cDNA Library Preparation: Michael J. Brownstein (NHGRI) with help
and advice from Piero Carninoi (RIKEN)
cDNA Library Arrayed by: The I.M.A.G.B. Consortium (LINL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.B. Consortium/LINL at:
http://image.llnl.gov
Plate: NDAMSO rown d column: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /Glone=TWAGGB:3036570"
/Lisaue type="pre-eclamptic placenta"
/lab_host="DH10B TonA"
/lab_host="DH10B TonA"
/clone_lib=NNH WGC 148"
/clone_lib=NNH WGC 148"
/noce="Organ: placenta; Vector: pBluescriptR, Site_1:
all-xhol; Site_2: Band; Library is oligo-dr primed_and
directionally cloned using primer
5. TTTTTTTTTTTTTTTTTTTTTVN-3', size-selected for average insert
size_13 kb and normalized to ROT 5. This is a primary
library enriched for full-lenght clones and constructed
using the Cap-trapper method (Carninci, in preparation).
Library constructed by M. Brownstein (NIMH/NHGRI,
National Institutes of Health). Note: this is a NIH_MGC
Library."
                   EST 01-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       958 CACTATITATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGT 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140 ccaccadactcaaacaactrocreccaccarcccaaaarcacacacacreraccagrerrr 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          260 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGAAGGCCCTTTGCTTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                898 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 957
                                                                                                                                                                                                                                                                                                                                                                      Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             778 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200 AGCIGACCIGAAIAAIGICAGAIICICAGCIIAIAGGACIGCCAIGAACICCGAAGACI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320 GCACAACCTCAAGCAAAAIGACCAGCCCAIGGATAICCTGCAGAITATTAAITGITIGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  380 CACTATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            718 CCACGAGACTCAAACAACTIGCTGGGACCAICCCAAAAIGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
43.9%; Score 571.4; DB 14; Length 801;
Best Local Similarity 99.7%; Pred. No. 3.5e-159;
Matches 583; Conservative 0; Mismatches 1; Indels 1;
CB991394 AGENCOURT 13627932 NIH MGC 148 Homo sapiens cDNA clone IMAGE:30336570 5', mRNA sequence.
```

718	Db 210 AGCTGACCTGAATANI	Oy 838 GCAGAAGGCCCTTTGC	Oy 898 GCACAACCTCAAGG	Oy 956 ACCACTATTATGACC	Qy 1016 GTGGATATGTGTCTGA 	1136	Db 570 TACAGATACCTITICA Qy 1196 GGCCTCCTTCTGCATG	1256	RESULT 7 AKOB426 LOCUS LOCUS DEFINITION Whe musculus 16 da	ACCESSION AKO81426 VERSION AKO81426 VERSION AKO81426.1 GI:263 KEYMORDS HTC, CAP trapper. SOURCE Mus musculus (hous	REFERENCE 1 AUTHORS Carning, P. and Ha TITLE High-efficiency for COURNAL Meth. Brzymol. 303 PUBMED 10349636 REFERENCE 2 AUTHORS Carning, P., Shiba		REFERENCE Shibata,K., Itoh,W AUTHORS Shibata,K., Akiyama, Konno,H., Akiyama, Sumi,N., Ishili,Y., Vamamoro D Maren
									••				
	500 TGTCCTGTGTTTTAAAACTGCCATCATTCCCTGTGTAAAGCACATTTGGAAGCAAGTA 1137	/ 1138 CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCAGGCTGGG 1197	/ 1198 CCTCCTTCTGCATGATTCTATCCAAGATGGGTGAAGTTGCAAGTTGGTCATCCTTTGG 1257	/ 1258 GGGCAGTAACATTGAGCCAAGTGTCC-GGAGCTGCTTCCAATTTG 1301 	SSULT 6 3719710 SCUS BG719710 770 bp mRNA linear BST 08-MAY-2001 SFINITION 602690430F1 NIH MGC_97 Homo sapiens cDNA clone IMAGE:4822807 5',	MENA sequence. (CESSION BG719710. (NASION BG719710.1 GI:13998897 (NANCES EST. (NANCES Homo sapiens (human)	<pre>OKCANISM HOMO Saplens UKCANISM HOMO Saplens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleogtomi; Mammalla; Butheria; Primates; Catarrhini; Hominidae; Homo. PERENCE 1 (bases 1 to 710) AUTHORS NIH-MGC http://mgc.nci.nih.gov/.</pre>	TITLE National Institutes of Health, Mammalian Gene Collection (MGC) JOURNAL Unpublished (1999) NWENT Contact: Robert Strausberg, Ph.D. Email: Cgapbs-romail.nih.gov	LISSUE FIGUREMENT: MAXIOS FAILMOILE, M.D., FILD. CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki Toshiyuki and Piero Carninci (RIKEN) CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:	Interpretable Transport Tr	/mol_type="mkNA" /db_xref="taxon:9606" /clone="IMAGE:482807" /clone="TMAGE:482807" /clone="The "NH MGC 97" /note="Organ: testis; Vector: pBluescriptR (modified pBluescript KS+); Site 1: BamH; Site 2: Sall-XhoI (gtcgag); Oligo-dT primed using primer (gtcgag); Oligo-dT primed using primer size selected for average insert size 2: Xb and normalized to ROT 5: This is a bisser, size: selected for average insert size 2: Xb and normalized to ROT 5: This is a bisser.	primary indicated the constructed for the constructed using the Cap-trapper method (Carninci, in preparation). Library constructed by M. Brownstein (NIMH/NHGRI, National Institutes of Health). Note: this is a NIH_MGC Library."	Query Match Hest Local Similarity 97.4%; Pred. No. 4e-149; Matches 568; Conservative 0; Mismatches 12; Indels 3; Gaps 2;

```
3753 bp mRNA linear HTC 20-SEP-2003 days embryo head cDNA, RIKEN full-length enriched 130016K19 product:dystrophin related protein 2, ence.
                                                                                                                                                                                                                                                                                             1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M., Sumi,N., Ishii,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAG 1135
                                                                                                                                                                                                                                                                                                                                                                   PARCTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATC 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genes
                                                                                                                                                                                                                                                                                                                              449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                628
                                                                                                                                                                                                                     955
                                                                                                                                                                                                                                                                                                                                                                                                        509
AACTIGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTT 777
                                                                       837
                                                                                                          269
                                                                                                                                             897
                                                                                                                                                                                                                                                        389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oa; Chordata; Craniata; Vertebrata; Euteleostomi;
la; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cagaardaccagcccarddararccrecagarrarraarrarra
                                                                                                                                                                                                                                                                                           COGCCTGGAGCAAGAGAACAATTTGGTCAACGTCCCTCTCTGC
                                                                                                                                                                                                                                                                                                                                                                                           BACTGGCTGCTGAATGTTTATGATACGGGACGAACAAGGGAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,
., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
d subtraction of cap-trapper-selected cDNAs to
gth cDNA libraries for rapid discovery of new g
10), 1617-1630 (2000)
                                                                                                 CTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                 GAGCCAAGTGTCCGGAGCTGCTTCCAAT 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hayashizaki,Y.
full-length cDNA c
03, 19-44 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (se monse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     349154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
```

φ

Page

EFERENCE AUTHORS

MEDLINE PUBMED

JOURNAL

TITLE JOURNAL EFERENCE

AUTHORS

TITLE

EFERENCE AUTHORS

JOURNAL

```
RSKHPORGYLEVOSVILESDOSETPASSPMLPHADTHSRIEHFASRLAEWESQNCSFFN
DSLEPDDSTDEDQYLLRHSSPITDREPAFGQQAFGGNATTERGELSKILAHLEDENRI
LOGELRRLWKOGHERAARAPTUVEGSABATPDHRNEELLAEARILROHKSRLETRWQIL
EDHKKQLESQLQRLESELLLQPPSESDGNGSAGSSLASSPRQSEGSHPREKGGTTPDTE
VADDVGSKSQDVSLCLEDIMEXLRHAFPSVRSSDVTANTLLAS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1251
                                                                                                   KEKLOYLFSOVANSGSOCDORHLGALLHEALQVPROLGEVAAFGGSNVEPSVRSCFRF
STGKPVIBASQFLEWVNLEPQSMVWLAVLHRVTIABOVKHOTKCSICRQCPIKGFRYR
SLKQFNVDICQTCFLTGRASKGNKLHYPIMEYYTPTTSSENWRDFATTLKNKFRSKOY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1191
                        LODAHRDFGPGSQHFLSTSVQVPWERAFSPNKVPYYINHQAQTTCWDHPKMTELYQTL
ADLNNIKFSAYRTAMKLRRVQKALRLDLVTLTTALEIFNEHDLQASEHVMDVVEVIHC
LTALYERLEBERGILVNVPLCVDMSLNWLLNVFDSGRSGKMRALSFKTGIACLGGTEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caectrieccarcrerargiecacriercarreagaarrecageecrergaacagare 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          reseanacacartriciccantrangicccincracincarcacacacacacacasca 1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1312 acarderiedeacearecraagardaereagrraraecaaaceraeceraecearereaae 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
LFKEEFSPVKDGVKLVNDLAHQLAISDVHLSMENSRALEQINIRWKQLQVSVAERLKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTIGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAAT 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTOGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Acrescrirerardaaadeaadacaacadresceadaacacreresceadaacacacce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ricaaagaagaarrcrcrcrcrcrcaaagarggggrgaagrragrgaarcrggcccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1132 AACATCCGGTGGAAACAGCTCCAGGTGTCAGTGGCTGAGAGGCTTAAGCAACTCCAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    geceaecasakenniasaeeensasieaeneaekenneeneneeseeneeneneesee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GITCAGAAGCAGAACGAIGIACAIAGGGCCITCAAGAGGGAAIIGAAAACIAAAGAACCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTACAACAGGAGAAGGAGACACATGCAGCCTTCATGGAAGAAGTCAAGTCTAAGGGCCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             racaretecerereciriosareceeeeaeerririeigreeeaeearetradaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 712 TTAGAGGAGTCTCAATCTGAGAGTAAAGATACCTCCCCCAGACAGGGGATTCAAAACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cecheneradancadeanceceacanneadeanacanciadaacancinanneeaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCAATGGAGGAATTGAGCAGTACTTTGACCCAAGCAGAGGGAGTCCGAGGCCACGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCCCATAGGAGATCTCTTTATTGATTCCCTCCCAGAGCATATCCAAGCCATCAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        434 CTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCACTTGGAAGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATTCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3753;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 535; DB 11;
Pred. No. 8.8e-148;
0; Mismatches 470;
                                                                                                                                                                                                                                                                                                                                           /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                            /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41.1%;
milarity 63.5%;
Conservative 0
                                                                                                                                                                                                                                                                                                                  3731.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                  polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              817;
                                                                                                                                                                                                                                                                                                                                                                      polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1252 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S Adachi, J. Alzawa, K. Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hirancto, K., Hiraokan, T., Harozane, T., Hori, F., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kasukawa, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Numazaki, A., Ohno, M., Ohsato, N., Okazaki, Y., Saito, R., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Tagami, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Muramatsu, M. and Hayashizaki, Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /traislation="MQPLVMQGCPYTLPRCHEWHAADRFHHSSSLRNTCPQPQVRAAV
TIPAPPWDGAGDPCLSPKLLMGTVGATGPLEPSBAMLCWNETHKKENHULRARLBAFSD
TISALQLPLREIIDMLSQKDSELSAQLPPLQGDVALVQGEKETHAAFMEEWSKGPYIS
SVLBSAQAFLSQHPPERLESEQSEKDTSPPQRIQNLSRYWKQATVASELWEKTLTAR
CVDQHRHIEHTLLEHLLBIQGAMEELSSTLTQAEGVRATWEPIGDLFIDSLPEHIQAIK
Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M., Yordda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Mareura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y. RIKEN integrated sequence analysis (RIES) system--384-format sequencing pipeline with 384 multicapillary sequencer 2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA library was prepared and sequenced in Mouse Genome
Encyclopedia Project of Genome Exploration Research Group in Riken
Genomic Sciences Center and Genome Science Laboratory in RIKEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'tissue_type="head"
'clone_lib="RIKEN full-length enriched mouse cDNA library"
                                                                                                                                                                                                                                                                                                                                                                                               Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 50,770 full-length CDNAs
Nature 420, 563-573 (2002)
6 (bases 1 to 3753)
                                                                                                                                                                                                                                       The RIKEN Genome Exploration Research Group Phase II Team and the FANTOM Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                      he FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                    Functional annotation of a full-length mouse cDNA collection Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="unnamed protein product; dystrophin related |
2 (MGD|MGI:107432, GB|U43520, evidence: BLASTN, 99%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prepare mouse tissues.
Please visit our web site for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "mol_type="mRNA"

'strain="C57BL/6J"

'db_xref="FANTOM_DB:C130016K19"

'db_xref="MG1:2413800"

'db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dev stage="16 days embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'protein_id="BAC38217.1"
'db_xref="GI:26349155"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone="Cl30016K19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       outative"
                                                                                                                                                                                        1076861
```

PEATURES

COMMENT

the

```
Subcases 1.0 1238)

Adachi, J. Alzawa, K. Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Haracha, T., Harz, T., Horz, F., Ishi, Y., Ishi, Y., Itoh, M., Kagawa, I., Kaukawa, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Marsuyama, T., Miyazaki, A., Muraca, M., Nakamura, M., Nishi, K., Nomura, K., Numarad, R., Ohno, M., Okazawi, Y., Saito, R., Saitoh, H., Sakai, E., Ohno, M., Okazawi, Y., Saito, R., Shibata, K., Shibata, K., Shizaki, T., Sakai, K., Sakazume, N., Sogabe, Y., Taqami, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Muramatsu, M. and Hayashizaki, Y. Yasunishi, A., Muramatsu, M. and Hayashizaki, Y. Toya, T., Yasunishi, A., Muramatsu, M. and Hayashizaki, Y. Direct Submission

Submitted (16-APR-2002) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1.7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-resege: Liken.go.jp, URL.http://genome.gsc.riken.go.jp, Tel:81-45-503-9222, Pax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RELOKALCEDELSESAACDALDOHNEKONDOPMDIEGIINGETTIYDREEGEHNNEW
VPLCVDMCLNWLLNYYDTGRTGRIRYLSFKTGIISLCKAHLEDKYRYLFKQVASSTGF
COPRELGELHEDSIQIPROLGEVASFGSONIEBSVRSCVOPANNKPETEAALFELDWR
LEPOSMWLPVLHRYAABTRAKHOAKCNICKECPIIGEPRISALKHPRYDICOSCFFSG
RVAKGHKMHYPWVEXCTPTTSGEDVRDFAKTHKNKFRTKRYPAKHPRMGYLPVQTVLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
| protein_id="pac40019.1"
| db_xref="G1:26352778"
| translation="MREHLKGHETQTTCWDHPKMTELYQSLADLANVRFSAYRTAMKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation 6 60,770 kll-length cDNAs
Nature 420, 563-573 (2002)
6 (bases I to 1298)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. Please visit our web site for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="ovary"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev_stage="2 days pregnant adult"
120.__1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="unnamed protein product; dystrophin, muscular dystrophy (MGD|MGI:94909, GB|NM 007868, evidence: BLASTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                     The RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                              FANTOM Consortium.
Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"
/mol type="mRNA"
/strain="C57BL/6J"
/db_xref="MG178L/6J"
/db_xref="MG178L/6J"
/db_xref="MG178L/6J"
/db_xref="HG178L/6J"
/clone="E330026B12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100%, match=999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     putative'
                                                                                                                                                                        11076861
                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                      TITLE
, JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                   MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
    TITEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                          1372 ATTAAGTTCTCAGCTTACGGACTGCCATGAAGCTCCGCAGAAGTCCAGAAGGCCCTGCGC 1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAAC 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Credadededanagaegedarccredarcharcheccachererereracacareacereaac 1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTTTCAAG 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AK087829 has a linear HTC 20-SEP-2003 Max musculus 2 days pregnant adult female ovary cDNA, RIKEN full-length enriched library, clone:E330026B12 product:dystrophin, muscular dystrophy, full insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGAACATGTGATGGATGTGGAGGTCATTCACTGCTTGACTGCCTTGTATGAACGA 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTAAA 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        réderectea a rentrativa de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata del contrata del contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata de la contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCAGGCTGGGCCTCCTTCTGCATGAT 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTAGCCAATTCAGGCAGCCAGTGTGATCAACGCCATCTCGGTGCCCTGCTTCATGAA 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCATTCAAGTGCCCCGTCAGCTGGGTGAAGTGGCAGCATTTGGGGGGCAATGTGGAA 1851
                                                                                                                                                                                                                                                                                         CTGGATCTGGTAACTTTAACTACAGCTCTGGAGATCTTCAATGAGCATGACTTGCAGGCC 1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Actidecaticecatectrefrencescenterandadadadadadacentererizione 1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1214 TCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGGCAGTAACATTGAG 1273
                                                                                                                                                                                                   854 TIGGAICTCTIGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACACCTCAAGCAA 913
                                                                                                                                                                                                                                                                                                                                                                           AATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGC 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishino, T., Harada, A., Yamamoto, R., Matsunoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Pujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                               GTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carninci,P. and Hayashizaki,Y.
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAAGTGTCCGGAGCTGCTTCCAATTT 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cccadidiccdradcidcitricgciti 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AK067829
AK087829.1 GI:26352777
HTC; CAP trapper.
Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11042159
                                    794
                                                                                                                                                                                                                                                                                         1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1274
                                                                                                                                                                                                                                                                                                                                                                      914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OCUS
EFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCESSION
ERSION
EYWORDS
JURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
PUBMED
SFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESULT 8
K087829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
```

ω

≿ ŏ ≿ ŏ

```
Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sundi, N., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamnoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Ohazaki, Y., Ishikawai, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramateu, M., Inoue, Y., Kira, A. and Hayashizahi, Y. RIKEN integrated sequence analysis (RISA) system--384-format Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /rissue_type="hippocampus"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                   The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Please visit our web site (http://genome.gsc.riken.go.jp/) for further details.
                                                                                                                                                                                                                                                                        The RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                         FANTOM CONSOLTIUM.
Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Mus musculus"
/mol_type="mRNA"
/strain="C57BL/61"
/db_xref="MG1.905833"
/db_xref="MG1.905833"
/db_xref="mG1.1090"
/clone="2900010C03"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="male"
                                                                                                                                                                                                                                       11076861
     11042159
                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
   PUBMED
                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                       PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1137
                                                                                                                                                                                                                                                                                                                                                                                                958 CACTATITATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGT 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to repare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATATGTGTCTGAACTGGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTC 20-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   559
                                                                                                            777
                                                                                                                                                                             778 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT 837
                                                                                                                                                                                                                    259
                                                                                                                                                                                                                                                                                                                                                                                                                                        439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619
                                                                                                                               140 CCACGAGACCCAAACCACTTGTTGGGACCACCCCCAAAATGACAGAGCTCTACCAGTCTTT 199
                                                                                                                                                                                                                                                         897
                                                                                                                                                                                                                                                                                       260 ccadaaddcctrrrgcrrrgarcrrcrrcadccrrcrcadcracardrandccrrdadcca 319
                                                                                                                                                                                                                                                                                                                              957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                   GCACAACCTCAAGCAAAATGACCAGGCCCATGGATATCCTGCAGATAATTAACTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  560 CAGATACCTITICAAGCAAGIGGCAAGTICAACTGGCTTTIGIGACCAGCGTAGGCTGGG
                                                                                                        718 CCACGAGACTCAAACTAGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                200 AGCTGACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCCATGAAGCTCAGAAGGCT
                                                                                                                                                                                                                                                     GCAGAAGGCCCTTTGCTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                    380 TACAATITATGATCGTCTGGAGCAGAGCACAACAATCTGGTCAATGTCCCTTCTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            620 refrerrecardarreratreaaareceaadacadradgadgradgraderrecerred
                                                                           Gaps
                                                                         .
0
                                      Length 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 526.4; DB 11; Length
Pred. No. 1.5e-145;
0; Mismatches 36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1258 GGGCAGTAACATTGAGCCAAGTGCCGGAGCTGCTTCCAATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
99279253
10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                Query Match
Best Local Similarity 93.8%;
Matches 548; Conservative (
                                                                                                                                                                                                                                                     838
                                                                                                                                                                                                                                                                                                                            868
                                                                                                                                                                                                                                                                                                                                                               320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ESULT 9
KO13510
OCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
PUBMED
EFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
DRIGIN
```

```
b (usets 1 to 441),

Ladachi J. Alzawa, K. Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hashizume, W., Fukuda, S., Furuno, M., Haranco, K., Hiracka, T., Hirozane, T., Horzi, F., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kasukawa, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Marsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Namazaki, R., Ohno, M., Ohsato, N., Sano, H., Sasaki, D., Saitoh, H., Sakai, E., Sakai, K., Sakazume, N., Sagabe, Y., Taraka, I., Marataki, T., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Murantsu, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Murantsu, M., Tagawa, A., Toya, T., Yasunishi, A., Direct Submission and Hayashizaki, Y. Buboratory for Genome Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN) Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute, 1-7-22 Suehiro-cho, Tsurum,-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail genome-resegec riken.go.jp, Fax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax: Blush 145-503-9222, Pax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue type="vagina"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev_stage="adult"
29. .1968
                                        new genes
                                                                                                                                                                                                  Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, X., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Masumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Yujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. Sequencing pipeline with 384 multicapillary sequencer analysis (RISA) system-384 format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,700 full-length cDNAs
Nature 420, 563-573 (2002)
6 (bases 1 to 4437)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="dystrophin, muscular dystrophy (MGD|MGI:94909,
GB|NM_007868, evidence: BLASTN, 100%, match=999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Functional annotation of a full-length mouse cDNA collection Nature 409, 685-690 (2001)
prepare full-length cDNA libraries for rapid discovery of denome Res. 10 (10), 1617-1630 (2000) 20499374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The RIKEN Genome Exploration Research Group Phase FANTOM Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Please visit our web site for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/strain="C57BL/6d"
/db_xref="FANTOW DB:9930028B14"
/db_xref="MGI:2401399"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:10090"
/clone="9930028B14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .4437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                             MEDLINE
PUBMED
                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AK036936

Mus musculus adult female vagina cDNA, RIKEN full-length enriched library, clone:9930028B14 product:dystrophin, muscular dystrophy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .018 GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .078 IGTCCTGTCTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA 1137
                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        563
                                                                                                                                                                                                                                                                                                                                                        111
                                                                                                                                                                                                                                                                                                                                                                                                                          203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             564 cagaraccrirircaagcaagregcaagricaacregcririrgreaccagceraggcrege 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                838 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA 897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       898 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     324 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATAATTAACTGTTTGAC 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    624 retrefretedatearcatretaarcecaadacagregagagardagregeretegagard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204 AGCTGACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCCATGAAGCTCAGAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264 CCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCCTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 444 GGATATGTGTCTCAACTGGCTTCTCAATGTTTATGATACGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     504 rerecrerentinaaaacrescarearricarricaraaascacacriresaasaaaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1138 CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1198 CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to
                                                                                                                                                                                                                                                                                                                                                                                                                          144 CCACGAGACCCAAACCACTTGTTGGGACCACCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            778 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               958 CACTATITATGACCGCCTGGAGCAAGAGCACAACAATTIGGTCAACGTCCCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                 718 CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTT

    1. .2135
/note="dystrophin, muscular dystrophy (MGD|MGI:94909,
GB|NM_007868, evidence: BLASTN, 100*, match=999)"

                                                                                                                                                                                                                    DB 11; Length 2135;
                                                                                                                                                                                                                                                                                          .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1258 GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  684 GGGCAGTAACATTGAGCCGAGTGTCAGGAGCTGCTTCCAATTTG 727
                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
99279553
                                                                                                                                                                                                                Score 526.4; DB 11
Pred. No. 2.2e-145;
0; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AK036936.1 GI:26085504
                                                                                                                                                                                                                Match 40.5%;
Local Similarity 93.8%;
les 548; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            full insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0349636
                                               misc_feature
                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CO36936
COUS
SPINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCESSION
STRION
SYWORDS
DURCE
ORGANISM
                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
PUBMED
SFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
```

TITLE

```
/tissue_type="pancreas"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev_stage="10 day old"
120. _1142
Itch, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Mormalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                     Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, M., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsuumoto, H., Sakaguokoi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, B., Matshiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, and Haysshizaki, Y. RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Research Group in Riken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Rike Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                   The RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                                                                                                                                                                          FANTOM Consortium. Functional amouse cDNA collection Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prepare mouse Lissues.
Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="FANTOM_DB:1810074E05"
/db_xref="MG11.908112"
/db_xref="texon:10090"
/clone="1810074E05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/mol_type="mRNA"
/strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .1384
                                                                                                        11042159
                                                                                         20499374
                                                                                                                                                                                                                                                                                                                                                                                11076861
                                                                                                                                                                                                                                                                                                                                                              20530913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bource
                                                                                                                                                                                                                                                                                                                                                                           PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                JOURNAL
                                                                                       MEDLINE
                                                                                                           PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTC 20-SEP-2003
                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       958 CACTATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGT 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1198 CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      289 TACAATTTATGATCGTCTGGAGCAAGAGCACAACAATCTGGGTCAATGTCCCTCTCTGTGT 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    528
                                                                                                                                                                                                                                 777
                                                                                                                                                                                                                                                                         108
                                                                                                                                                                                                                                                                                                                                                            168
                                                                                                                                                                                                                                                                                                                                                                                                    897
                                                                                                                                                                                                                                                                                                                                                                                                                                            228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       588
                                                                                                                                                                                                                                                                                                                 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia; Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AK075809

Mus musculus 10 day old male pancreas CDNA, RIKEN full-length enriched library, clone:1810074805 product:dystrophin, muscular dystrophy, full insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             409 IGECCIGICITITAAAACTGGCATCATTTCTCTGTGTAAAGGCACACTTGGAAGAAAAATA
                                                                                                                                                                                                                                 718 CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                         ccaccaccaaaccacrigingscaccaccaaarcacacccaaarcacacritaccacriri
                                                                                                                                                                                                                                                                                                                 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                       109 AGCTGACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCCATGAAGCTCAGAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                    838 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                        169 ccasaassccrrrscrrssarcrcrrsasccrsrcascrscarsrsarscccrssacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATATGTGTGTGTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               349 GGATATGTGTCTCAACTGGCTTCTCAATGTTTATGATACGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                469 CAGATACCTTTTCAAGCAAGTTCAACTGGCTTTTGTGACCAGCGTAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     529 retretrerecardarretarreaarcecaadacacridograaarrecritog
                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K.,
                                                                                                                                                 Length 4437;
                                                                                                                                                                                         ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCAGTAACATTGAGCCGAGTGTCAGGAGCTGCTTCCAATTTG 632
                                                                                                                                                                                         Indels
                                                                                                                                                 DB 11;
                                                                                                                                              Score 526.4; DB 11;
Pred. No. 3.8e-145;
0; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High-efficiency full-length CDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
99279253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carninci, P. and Hayashizaki, Y.
           4417. .4422
/note="putative"
4437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                         /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AK075809
AK075809.1 GI:26344655
                                                                                                                                                 Query Match
Best Local Similarity 93.8%;
Matches 548; Conservative
        putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10349636
                          polyA_signal
                                                                polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1078
                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ESULT 11
LK075809
OCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCESSION
FERSION
(EYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EFERENCE
AUTHORS
TITLE
JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUBMED
EFERENCE
AUTHORS
                                                                                                           RIGIN
```

```
Email: cgapbs-remail.nl.gov

Trisue Procurement: Dr. Stefan Hansson

CDNA Library Preparation: Michael J. Brownstein (NHGRI) with help

and advice from Piero Carninci (RIKEN)

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: MGC clone distribution information can be

http://image.lln.gov now; n column: 08

Plate: NDAMASO row: n column: 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168 CCACGAGACTCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTAGCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                348 GCACAACCTCAAGCAAAAIGACCAGCCCAIGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        528 rerectererritaaaaeresearearriceereraaaeeaeaearringaaaeaeaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGATACCITITICAAGCAAGTGGCAAGTICAACAGGATITITIGIGACCAGCGCAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCACGAGACTCAAACATTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGAAGGCCCTTTGCTTTGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      288 gcagaaggcccrrrgcrrggarcrcrrgagccrgrcagcrgcargrgargccrrggacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACTATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGGCGCGACGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGATATGTGTGTGTGTGTGTGTGTTTTATGATACGGGACGAACAACAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         228 AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACAACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           408 CACTATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGT
1 (bases 1 to 797)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Uppublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pBluescriptR; Site_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39.3%; Score 511; DB 14; Length 797; 99.8%; Pred. No. 4.3e-141; ative 0; Mismatches 0; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1198 -CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGG 1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="Human Placenta"
/lab host="DH10B TonA"
/clone_lib="NHI MGC_lat"
/note="Organ: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; Vector: placenta; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone="IMAGE:30344479"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 620.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Loca
Matches
REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              · 8
                                                                                                                                                                                                                    /protein_id="BAC35977.1"
/db_xref="G1:26344656"
/tb_xref="G1:26344656"
/tb_xref="G1:26344656"
/tb_xref="G1:26344656"
/remala_ton="MREHIXGHETQTTCWDHPKMTELYQSLADLNNVRFSAYRTAMKL RRLQKALCIDLLSLSAACDALDGHNLKQNDQPMDILQJINCITTIYDRLBQBHNLVN VPLCYDMCLNWLLNVYDTGRTGRIRVLSFKTGIISLCKAHLEDKYRYLFKQVASSTGF
                                                                                                                                                                                                                                                                                                                                                                                                                                    CDQRRLGLLLHDSIQIPRQLGEVASFGGSNIEFSVRSCFQFANKPEERAALFDWMR
LEPOSMVWLPVJHRVAAAETAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFFSG
VAXGHKWHYPMVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLPVQTVLE
GDNMET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1198 CCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGG 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   958 CACTATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAAGGTCCCTCTCTGCGT 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 29-APR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260 CCAGAAGGCCCTTTGCTTTGGATCTCTTGAGCCTGTCCGCTGCATGTGATGCCCTGGACCA 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATATIGTGTCTCAACTGGCTTCTCAATGTTTATGATACGGGACGAACAGGGAGGATCCG 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCCTGTCTTTTAAAACTGGCATCATTTCTCTGTGAAAACACACTTGGAAGACAAGTA 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACAACCTCAAGGAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC 957
    note="unnamed protein product; dystrophin, muscular lystrophy (MGD|MGI:94909, GB|NM 007868, evidence: BLASIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccaccaccaaaccacristresseaccacccaaaareacagacreraccastcrir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTGACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCCATGAAGCTCAGAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATAATTAACTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cagatraccriticaaggaagregcaagricaacregcritirgreaccagggraaggrege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               620 refrerictedationalicial coa a considera de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             380 TACAATTTATGATCGTCTGGAGCAAGAGCACAATCTGGTCAATGTCCCTCTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 524.8; DB 11; Length 1384; Pred. No. 4.8e-145; 0; Mismatches 37; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CB960722 797 bp mRNA linear ES:
AGENCOURT_13761995 NIH MGC_147 Homo sapiens CDNA clone
IMAGE:30344479 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1258 GGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         680 gegeraracarreaeceaerereaeaecrecricearrie 723
                                                                                              100%, match=999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CB960722.1 GI:30216839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (human)
                                                   dystrophy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 93.7
Matches 547; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SCUS
SFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERSION
EYWORDS
JURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3SULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CESSION
```

227 837 287

Gaps .. 1077

467

527

1017

957 407

897 347 1137

1197

587

_copy_1800_3100.rst

us-09-845-416-10

മ

```
1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTOGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTTTCAAG 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGGCAGTAACATTGAG 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BB629984 RIKEN full-length enriched, adult female vagina Mus musculus cDNA clone 9930028B14 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTAAA 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acticicatrocaticatricacocoscos de acticada da de a caracactaca de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1612 gecarreagracecegreagerageragaraakrageageerrigagageerageaararagag 1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACGTCCGATGGAAACAACTACAGGCGTCAGTTAGTGAGAGGCTTAAGCAGCTCCAGGAT 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 853
                                                                                                                                   493
                                                                                                                                                                                                                                                                       553
                                                                                                                                                                                                                                                                                                                                         951
                                                                                                                                                                                                                                                                                                                                                                                                              613
                                                                                                                                                                                                 891
CAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCA 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1372 Triedadedadadadadadarccriedropacerecrecrieraroropacarieadocara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1252 Tricciaciaeraacrriaaccacaciccrecaaarcricaareaccicarcacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGTGGCAAGTTCCAACAGGATTTTGTGACCAGCCAGGCTGGGCCTCCTTCTGCATGAT
                                                          GAGCCCATTGGGGATCTCTTCATTGATTCACTCCCAGAGCACATCCAGGCTATTAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1012 GCCCACCGGGACTTTGGGCCTTGGGTCACAGCACTTTCTCTCCTCCTCTCTGTCCAGGTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        914 AATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGAGCAAGAGCAACAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1432 rescrictoraretrirricaras de rescenses de asas de constructor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la rescrictor de la re
                                                                                                                                                                                                     Trcaaagaagaarrcrccccardaaagarccagaaraaagragargaargaarcrcac
                                                                                                                                                                                                                                                                           CAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTTGGAAGACCTG
                                                                                                                                                                                                                                                                                                                                            CAACTTGCCATTTCTGATGTGCACTTGTCAATGGAGAATTCCCAGGCCCTGGAACAGATC
                                                                                                                                                                                                                                                                                                                                                                                                              AACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATTCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         734 ACTIGCIGGGACCAICCCAAAAIGACAGAGCICIACCAGICIIIAGCIGACCIGAAIAAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             794 GICAGALICICAGCITALAGGACTGCCATGAAACTCCGAAAGACTGCAGAAGGCCCTTTGC
                                                                                                                                       CTICGAGGAGAATIGGGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAAGTGTCCGGAGCTGCTTCCAATTT 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCAGTGTCCGTAGTTGCTTCCGTTTT 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:15399733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BB629984.1 EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1094 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   854
                                                                                                                                          434
                                                                                                                                                                                                                832
                                                                                                                                                                                                                                                                                                                                                    892
                                                                                                                                                                                                                                                                                                                                                                                                                         554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 674
                                                                                                                                                                                                                                                                                     494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 14
BB629984
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                 g
                                                                                                                        ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                    DNA linear GSS 15-DEC-2003
TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGGTGATCAAGGGATCCTGG 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Grechacheghehenehehreceechriranegaagahereharriceegeecee 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tradadedecrearrerdadadedaadaracereeeeaaacadedaareere 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194 ACTCCGCTTCTACCAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTG 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCGCTTTGTATGGAAGCAGGCGACGGTGGCCAGTGAACTGTGGGAGAAGTTGACAGCC 651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACTCCGCTGACTGGCAGAGAAAAAAAGATGGACCCTTGAAAGACTCCAGGAACTTCAA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cecngretaeaccaccaccacatreaeceactreaeaccacactreaeacactreaeacactreae 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGGCAATGGAGGAACTAAGCACTACTCTGAGCCAAGCTGAGGAGTCCGAGCCACTTGG 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
Llark, A.G. Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A., Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B., Ferriera,S., Wano,G., Zheng,X.H., White,T.J., Sninsky,J.J., Adams,M.D. and Cargill,M.
Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clark, A.G. Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Tu, F., Murphy, B., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Direct Submission Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       472 TACATCTATTCTGTGCTGGAGTCAGCTCAGGCCTTCCTGTCCCAGCACCCCATTTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 29; Length 2874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
39.1%; Score 508.2; DB 29; Length
Best Local Similarity 60.4%; Pred. No. 7.7e-140;
Matches 777; Conservative 0; Mismatches 510; Indels
                                                   690
          CCCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Science 302 (5652), 1960-1963 (2003)
14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                           2874 bp
VIRTUAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="DRP2"
/locus_tag="HCM3260"
                                                                                                                                                                                                                                                        Homo sapiens DRP2 gene,
genomic survey sequence
                                                                                                                                                                                                                                                                                                                                 AY408546
AY408546.1 GI:39764517
                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .2874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        712
                                                                                                                                                         (ESULT 13
VY408546
JOCUS
)EFINITION
                                                                                                                                                                                                                                                                                                                          CCESSION
FERSION
EYWORDS
COURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EFERENCE AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
```

g

ò

d

à

g

ò

a

ò

유

ò g

ઠે

TITLE JOURNAL MMENT

FERENCE

```
Science 302 (5652), 1960-1963 (2003) 14671302 2 (bases 1 to 2874)
                                                                                                                                                      38.6%; Score 502.8; ilarity 92.6%; Pred. No. 1.1e Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus DRP2 gene, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AY408548.1 GI:39764519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 2874)
                                                                                                                                                                               Local Similarity
nes 539; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY408548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY408548
                                                                                                                                                                                                                                                                                                                                                                        778
                                                                                                                                                                                                                                                               718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               928
                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
AY408548
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                        요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 175-1771 (2000)
Konno, H., Fukunish, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara, Y. and Haysshizaki, Y.
Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of a nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001)
Yamanaka, I., Kiyosawa, H., Kondo, S., Saito, T., Shinagawa, A., Arakawa, T., Ishii, Y. and Haysshizaki, Y.
Mapping of 19032 mouse cDNAs on mouse chromosomes. J. Struct. Func. Genomics 2 pre, L72-L86 (2001)
Please visit our web site (http://genome.gsc.riken.go.jp) for further details.
e mouse tissues.
                                                                                                Tankard, L. Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Rarai, J., Histamoto, K., Hori, F., Fukuda, S., Furuno, M., Hanagaki, T., Ramai, J., Histamoto, K., Hori, F., Marsuyama, T., Kawai, J., Komo, H., Kouda, M., Koya, S., Matsuyama, T., Mayazaki, A., Nomura, K., Suno, H., Sasaki, Y., Okido, T., Saito, R., Sakai, C., Sakai, K., Sano, H., Sazaki, D., Shibata, K., Shibata, K., Shibata, K., Shibata, K., Shibata, K., Shibata, K., Shibata, K., Shibata, K., Shibata, R., Sakai, K., Sakai, K., Sazuki, H., Tagawa, A., Takahashi, F., Takeda, Y., Tanaka, T., Toya, T., Muramatsu, M. and Hayashizaki, Y. RIKEN Mouse ESTS (Arakawa, T., et al. 2001)

L. Dupublished (2001)

L. Dupublished (2001)

Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (300), Yokohama Institute

The Institute of Physical and Chemical Research (RIKEN)

1-7-22 Suchinco-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan Tel: 81-45-503-9226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             prepared by using trehalose thermo-activated reverse transcriptase and subsequently enriched for full-length by exp-trapper. CDNA went through one round of normalization to Rot = 10.0 and subtraction to Rot = 185.0. Second strand cDNA was prepared with the primer adapter of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Site 1: Sall; Site 2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Forject of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: genome_resegsc.riken.go.jp,
URL:http://genome.gsc.riken.go.jp,
Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,
Itch,M., Korno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
Mataniki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T.,
and Hayashizaki,Y.
                                                   Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone lib="RIKEN full-length enriched, adult female vagina"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/db_xref="taxon:10090"
/clone="9930028B14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="vagina"
/dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
  Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .652
URCE
ORGANISM
```

ATURES

```
1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2874 bp DNA linear GSS 15-DEC-2003
VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1198 CCTCCTTCTGCATGATTCTATCCAAGATAGATTGGGTGAAGTTGCATCGTTTGG 1257
1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus. 1 (Dases 1 to 2874)
1 (Dases 1 to 2874)
1 Todd, M.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Iu, F., Murphy, B., Perriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, White, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     838 GCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  165 ccagaaggcccrrrrgcrrrggarcrcrrgagccrgrcagcrgcargrgargccrcrgaacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  225 GCACAACCICAAGCAAAAIGACCAGCCCAIGGAIAICCIGCAGAIAAIIAACIGIIIGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1018 GGATATGTGTGTGGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              345 GGATATGTGTCTCAACTGGCTTCTCAATGTTTATGATACGGGACGAACAGGGAGGATCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1138 CAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465 cagaraccirircaagcaagragcaagricaacragcririrgraaccagcgragg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                525 rcirciiciecaigairciaircaaarcccaagacacgiggaggagiigcricciiigc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45 ccaccadadeccadarecacridares de concerada de contraccación de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contractor de contract
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACTATTTATGACCGCCTGGAGCAAGAGCACAACTTTGGTCAACGTCCCCTCTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     285 TACAATTTATGATCGTCTGGAGCAAAAAGCACAACAATCTGGTCAATGTCCCTCTCTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1078 TGTCCTGTCTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             405 rerectererranaaacreserearricerereranaaecacacresaaraa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCACGAGACTCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 502.8; DB 10; Length
Pred. No. 1.1e-138;
0; Mismatches 42; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1258 GGGCAGTAACATTGAGCCCAAGTGCCGGAGCTGCTTCCAATT 1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           585 GGGCA-TAACATTGAGCCGAGTGTCAGGAGCTGTTTCAATTT 625
```

```
794
                                                                                                                                                 1192
                                                                                                                                                                                                                                                                                                                                                             914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1672
                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                              ઠે
                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                             ર્જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             952 AACATCCGGTGGAAACAGCTCCAGGTGTCAGTGGCTGAGAGGCTTAAGCAACTCCAGGAT 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1012 GCCCACCGGGACTTTGGGCCTGGGTCACACTTCCTCCACTTCTGTCTACTTCTAGTTCCC 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTG 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             554 AACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAA 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             674 TGGGAGAGGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACA 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTIGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAAT 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Agricectrirerargandecadecaacaereecaargacererereeaagaagereacaece 651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCCTTGAAAGACTCCAGGAACTTCAA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGG 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGCAATGGAGGAATTGAGCAGTACTTTGACCCAAGCAGAGGAGTCCGAGCCACGTGG 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCCCGTGGGCGATCTCCTCTTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCA 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       772 GAGCCCATAGGAGATCTCTTATTGATTCCCTCCCAGAGCATATCCAAGCCATCAAGCTA 831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCGAGGAGAAATTGCGCCTCTGAAAGAAAGGAACGTGACGTCAATGACCTTGCTCGC 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caectroccarcrorarerecarcricicardadeaarrocaeeecroreeaacaarc 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        112 GTACAACAGGAGAGGAGACACATGCAGCCTTCATGGAAGAGTCAAGTCTAAGGGGCCCC 471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTOGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTG 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cecieneradarcadarceccadarreaceradrecendes de contracterados de des de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados de contracterados
Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Pertlera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Direct Submission
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          racarcrerereretridaarececeaecerrirerererededarecarrireaaeaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       532 Tradadedererearereadraadraaderecereededededederere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAAGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 2874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18.2%; Score 497; DB 29; al Similarity 59.8%; Pred. No. 1.7e-136; 770; Conservative 0; Mismatches 517;
                                                                                                                                                                                                                                                                                                                                                      1..2874,
Organism=Mus musculus"
/mol_type="genomic DNA"
/db_xref="taxon:10090"
/db_xref="taxon:10090"
/gene="DRP2"
/locus_tag="HCM3260"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loca
Matches
                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
       AUTHORS
                                                                                                                                                                                                                                                                                                                            EATURES
                                                                                                                                                                                                                                                         OMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RIGIN
```

```
1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1214 TCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGGAGTAACATTGAG 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1252 crocearcrostradoracorados con contra con contra de contradora de 1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Actescarcscarscerstrassaceas de la actes de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la contracta de la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caagragecaarreaggeagecagrergareaacgecarereggreecergerreargaa 1611
913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 854 TIGGAICTCTTGAGCCTGTGAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1094 ACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCTTTTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1612 gecatricaagiececercagendagendaagingedagearitrooggedageargiegag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1312 AGTGAACATGTGATGGATGTGTGTGGTCATTCACTGCTTGACTGCCTTGTATGAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGAGCAAGAGCAATTTGGTCAACGTCCCTCTCTGCGTGGATATGTGTCTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGCTGCTGAATGTTTATGATACGGACGACAACAGGGAGGATCCGTGTCCTGTCTTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rescriccionarentricara en de la companidad de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra dela contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra dela contra dela contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cregadeaagadaagadarccregreaarereceacrerereradadarareadecereaac
                                                                                                                                                                                                                                                                                                          GICAGAITCICAGCITATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccaagrecessacrecriccaarrr 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cccadidiccinaciderirecent 1698
```

Search completed: April 5, 2004, 08:15:13 Job time : 2280.99 secs

```
3066 CCTAGAAGACTCCAAGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 3125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             993 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAATCCTGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3126 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG 3185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1053 ATCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 69, Appli
Sequence 1, Appli
Sequence 4, Appli
Sequence 82, Appli
Sequence 847, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 24, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 10, Appli
Sequence 7, Appli
Sequence 9, Appli
Sequence 93, Appli
Sequence 5, Appli
Sequence 4, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
                                                                                                            April 4, 2004, 16:58:13 ; Search time 97.0414 Seconds (without alignments) 11443.127 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 15639, A
Sequence 1, Appl:
Sequence 1186, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No. 5180810
Patent No. 5180810
Sequence 76, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                l ggcagttcattgatggagag......tcaaccacgagactcaaaca 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 60,
Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1: /cgn2 6/ptodata/2/ina/5A COMB.seq:*
2: /cgn2 6/ptodata/2/ina/5B COMB.seq:*
3: /cgn2 6/ptodata/2/ina/6A COMB.seq:*
4: /cgn2 6/ptodata/2/ina/6B COMB.seq:*
5: /cgn2 6/ptodata/2/ina/PCTUS COMB.seq:*
6: /cgn2 6/ptodata/2/ina/PCTUS COMB.seq:*
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-835-023A-10

US-09-427-048A-10

US-09-109-1501B-7

US-09-109-1501B-9

US-09-091-501B-5

US-09-091-501B-6

US-09-091-501B-6

US-09-091-501B-6

US-09-091-501B-6

US-09-091-501B-6

US-09-091-501B-6

US-09-107-532A-1186

US-09-107-532A-1186

US-09-107-532A-1186

US-09-621-976-15639

US-09-621-976-15639

US-09-621-976-15639

US-09-621-976-15639

US-09-621-976-15639

US-09-621-976-15639

US-09-621-976-15639

US-08-961-527-82

US-08-961-527-82

US-08-961-527-82

US-08-961-527-82

US-08-117-84487

US-08-117-8487

US-08-117-8487

US-08-117-8487
                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5180810-2
US-09-247-155-76
                                                                                                                                                                                                                                                                                                                              682709 segs, 277475446 residues
                                                                                                                                                                                     US-09-845-416-6_COPY_1000_3000
2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                             OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                  IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Issued Patents NA:*
                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5952
13977
19307
19307
6045
10320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  832
2223
16995
1751
1995
                                                                                                                                                                                                             Perfect score:
                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311.8
311.8
79.4
78.6
78.6
76.6
63.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.2.4
4.2.8
4.2.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                  Sequence:
                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Result
No.
                                                                                                                                                                                             Title:
```

Patent No. 5210183 Sequence 22, Appl Sequence 23, Appl Sequence 24, Appl Sequence 17, Appl Sequence 17, Appl Sequence 17, Appl Sequence 17, Appl Sequence 13, Appl Sequence 13, Appl Sequence 13, Appl Sequence 12, Appl Sequence 12, Appl Sequence 23, Appl Sequence 24, Appl Sequence 26, Appl Sequence 27, Appl Sequence 27, Appl Sequence 27, Appl Sequence 27, Appl Sequence 27, Appl Sequence 27, Appl Sequence 27, Appli Sequence 27, Appli	ING AND TRANSPERRING TRANS-SPLI	(319E)(3199) RMATION: S2 Junction site 1.
5210183-1 US-08-687-534A-22 US-09-57-431-263 US-09-007-005-17 US-09-04-796-17 US-09-244-796-17 US-09-244-796-17 US-09-248-23 US-08-55-121E-832 US-08-956-171E-832 US-08-956-171E-832 US-08-9154-13 US-09-916-1474-13 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2 US-09-918-710-2	ALIGNMENTS 19687875A AND VECTOR FOR PRODUCING US/09/687,875A 10-13 0/158,868 15 3.1	inisc feature (1)199) RMATION: S2 Junction site 10
1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8	ion US/0 ul METHOD 92 NUMBER: 1 2000- 11999-10- S: 22 version iens ture (2898)	ION: (3198)(3199) INPORMATION: S2 junction -875A-1 atch 59.1%; S
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RESULT 1 US-09-687-875A Sequence 1, Patent No. RAPPLICANT: APPLICANT: APPLICANT: APPLICANT: TITLE REFRER CURRENT FILIN FILE REFRER CURRENT FILIN PRICA APPLICANT: PRICA APPLICANT: PRICA APPLICANT: PRICA APPLICANT: PRICA APPLICANT: TYPE: DNA. CREATURE: FEATURE: FEATURE: AMARIKES: NAME/KEY: NAME/KE	NAME/KEY: 10CATION: 10CA
•		

ICED P

```
1472
                                                                                                                                                                                                                                                                                                                                          8319
                                                                                                                                                                                                                                                                                                                                                                                                     8379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9039
                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 1652
                                                                                                                                                                                                                                                                                                             872
                                                                                                                                                                                                                                                                                                                                                                        932
                                                                                                                                                                                                                                                                                                                                                                                                                                    992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8380 CCTAGAAGACTCCAAGGGAGTAAAAGGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8860 CTÁCCAGGAGCCCAGAGAGCTGCCTCGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                             813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                         8260 ggaagaacrcaragarracrgcaacagrrcccccrggaccrggaaaagrrrcrrgccrg
                                                                                                                                                                                                                                                                                                                                                                         GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                             8320 GCTTACAGAAGCTGAAAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1113 CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8560 caagrocacrocacaaaaagrororcaacarracerocarrigaaaccaacroc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8620 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGCCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                Length 13977;
                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                Indels
                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                4,
                                                                                                                                                                                                                                                Query Match 59.1%; Score 1182.6; Best Local Similarity 99.7%; Pred. No. 0; Matches 1185; Conservative 0; Mismatches
CURRENT APPLICATION NUMBER: US/09/484,970B CURRENT FILING DATE: 2000-01-18 NUMBER OF SEQ ID NOS: 172 SOFTWARE: PERL PROGRAM SEQ ID NO 60 LENGTH: 13977
                                                                                               TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8680
                                                                                                                                                                                                                                                                                                                                                                         873
                                                                                                                                                                                                                                                                                                                                                                                                                                    933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8920
                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                         ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                            3365
                                                                                                                                                          1292
                                                                                                                                                                                                                      1352
                                                                                                                                                                                                                                                                                                               3545
                                                                                                                                                                                                                                                                                                                                            1472
                                                                                                                                                                                                                                                                                                                                                                                                        1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 3425
                                                                                                                                                                                                                                                 GAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG 3485
                                                                                                                                                                                                                                                                                TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                    accadaccadecreaceacerearracreacacacacacarreaaccrecacrecerea 3665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATCTCCTCATTGACTCTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 3845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTGCGCCTCTGAAAGAAGGAAGCTGACGTCAATGACCTTGCTCGCCAGCTTACCAC 1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 3905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAAACACCCAGATG 1832
         ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 3245
                                                                  CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGCTACAGCTGAA
                                                                                                                 TGACCACTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                  TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                          craccadadecedadadecreecereadadadadecedadarereaceree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAGCTTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                      ACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaagerrerecageregecerceaceaceacreageacreaceacrecareaageceacageaa
                                     CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                           AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 60, Application US/09484970B
Patent No. 6426186
GENERAL INFORMATION:
APPLICANT: Jones, Karen A.
APPLICANT: Volkmuth, Wayne
APPLICANT: Walker, Michael G.
TITLE OF INVENTION: BONE REMODELING GENES
FILE REFERENCE: PB-0014 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 2
US-09-484-970B-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1713
                                                                    3246
                                                                                                 1173
                                                                                                                            3306
                                                                                                                                                          1233
                                                                                                                                                                                        3366
                                                                                                                                                                                                                                                   3426
                                                                                                                                                                                                                                                                                                                                                                           3546
                                                                                                                                                                                                                                                                                                                                                                                                                                    3606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1953
         3186
                                                                                                                                                                                                                       1293
                                                                                                                                                                                                                                                                                   1353
                                                                                                                                                                                                                                                                                                               3486
                                                                                                                                                                                                                                                                                                                                            1413
                                                                                                                                                                                                                                                                                                                                                                                                        1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4086
                                                            g
                                                                                               ò
                                                                                                                                                  ò
                                                                                                                                                                                    9
                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                              8 8 8
                                                                                                                                                                                                                                                                                                                                                                 8 6 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
                           8
                                                                                                                    ద
                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
```

ö

1052 6195

992

1172 6075 1232 6015 1292 5955 1352 5895 1412 5835 1472 5775 1532

```
5474 ACTGGGCATTCAGCTCTCACCTTATAACCTCAGCACTTTGGAAGATCTGAATACCAGATG
                                                                                                                                                                                                                                                                                                                                                               993 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAACTGGACCTCAAGTTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCAGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1653 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5594 GGATCTCCTCATTGACTCTCTGCAAGATCACCTTGAAAAAGTCAAGGCACTTCGGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1713 AATTGCGCCTCTGAAAGAAAGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTGCACCTCTTAAAGAGAATGTCAATGGTCAATGACCTTGCACATCAGCTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITGGGCATICAGCICICACCGTATAACCICAGCACTCTGGAAGACCTGAACACACAGAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGTGGAGTGAAACTTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      agargargaacrigagccercagcacccarcegregrearrircccagcagricagaagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Acganadecaddecreaagadercaacecreaardddaarddaarrigaaccrececreaecrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1533 CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6134 CAAGTGGAGTGAACTTCAGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACCAGGAGCCCAGAGAACTGCCTCCTGAAGAAGAGCTCAGAATGTCACTCGGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1473 ACGAAAGCAGGCTGAGGAGGTCAATACTGAGAAAAAAATTGAACCTGCACTGCACTGC
                                                                                                                 813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                  GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                      6314 CCTAGAAGACTCCAGGGGAGTCAGAGAGCTGATGAAACCATGGCAAGATCTCCAAGGAGA
                                                                          ô
                                     Length 19307;
                                                                          Indels
                              Score 1004; DB 3;
Pred. No. 1.1e-302;
0; Mismatches 115;
                                  Query Match 50.2%;
Best Local Similarity 90.3%;
Matches 1073; Conservative (
US-08-836-022A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5534
                                                                                                                                                                                                      873
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5654
                                                                                                                                                                                                                                                                                     933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                      g
                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                  9339
                                                                                                                                                                                                                                                                                                                                                                                            1952
                                                                                                                                                                                                                                                                                                                                                                                                                                 9399
                                                                                                                                                                                     9219
                                                                                                                                                                                                                            1832
                                                                                                                                                                                                                                                                    9279
                                                                                                                                                                                                                                                                                                                                                                                                                    CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                       CGATCTCCTCATTGACTCTCTCCCAGAGATCACCTCGAGAAAGTCAAGACACATTCGAGGAGA
                                                                                                                                                <u>AATTGCGCCTCTGAAAGAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC</u>
                                                                                                                                                                      TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAAACACCCAGATG
                                                                                                                                                                                                                                                                 9280 gaadcircracaddigaccdrcdagaccdaciadcadcadcracardardaadcccacadaga
                                                                                                                                                                                                                                                                                                                                                                                            CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCTGGGAGAGAGC
                   reaccreeaccreaecrececcaaecreaegrearcaaesearccreecaeccerese
                                                             CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                             GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCAACAGGGA
CATCTCGCCAAACAAAGGGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 10. Application US/08836022A
Patent No. 6001557
GENERAL INFORMATION:
APPLICANT: Trustees of the University of Pennsylvania APPLICANT: Fisher, Krishna J.
APPLICANT: Fisher, Krishna J.
APPLICANT: Chem, Shu-Jen
APPLICANT: Weitzman, Matthew
TITLE OF INVENTION: Improved Adenovirus Virus and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Howson and Howson
STREET: Spring House Corporate Cntr, P O Box 457
CITY: Spring House
STATE: Pennsylvania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GNVPN.008PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
PRIOR APPLICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/331,381
PILING DATE: 28-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: Bak, Mary E.
REGISTATION NUMBER: 31,215
REFERENCE/DOCKET NUMBER: GNVPN.008P-
TELECOMUNICATION INFORMATION:
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
TELEFAN: 215-540-9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,022A
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 19307 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
TYPE.TANDEDINESS: double
TOPOLOGY: unknown
MOLECTLE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
US-08-836-022A-10/c
                                                                                                                                                                                                                                                                                                                                                                                                                                     9340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9400
                                                                                                                                                                                       9160
                                                                                                                                                                                                                                                                                                                                                                                                1893
                          9040
                                                                 1653
                                                                                                        9100
                                                                                                                                                1713
                                                                                                                                                                                                                              1773
                                                                                                                                                                                                                                                                        9220
                                                                                                                                                                                                                                                                                                               1833
                                                                                                                                                                                                                                                                                                                                                       ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                  d
                                                                                                                                              ઠે
                                                                                                                                                                                     셤
                                                                                                                                                                                                                              ठ
                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                 ठे
                        ద
                                                                 ò
```

5535 1772

1592 5655 1652 5595 1712

5715

ò 셤 ઠે g ò 셤

```
1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5295
                                                                                                                                              6195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5535
                                                                                                                                                                                                                                                       CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 1172
                                                                                                                                                                                                                                                                                          CAAGTGGAGTGAACTTCAGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCAAGTTC 6075
                                                                                                                                                                                                                                                                                                                                                                  6015
                                                                                                                                                                                                                                                                                                                                                                                                     AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATGATGAACTGAGCCGTCAGGCACCCATCGCTGGTGATTTCCCAGCAGTTCAGAAGCA 5955
6374 GATTACGGAAGCAGAAACAACTGCCAATGTCCTACAGGACGCTTCCCGTAAGGAGAAGCT 6315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5474 acrescentreáscrereacetraraacereascaetresaaareteaara
                                                                                                                                                                                                                                                                                                                               TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                  1593 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1773 TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5414 GAGGCTTCTACAGGTGGCTGTGGAGGACCGTGTCAGACAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTTGGTCCAGCATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAATGATATACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5774 accadadecadectedadecercadectedatedecadaticadectedecercadetea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCAGAGAAAATAGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1653 CGATCTCCTCTTTTTCTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5594 gearcrecrearreaerererecaagareaerraaaaaaagareaageeeeaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cirrigerccrecarccascacrirccirriccacricacricagicacricacarcciragasasacc
                                                                                                             <u> AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG</u>
                                                                                                                                    6194 Arcccresaaserrcssarsaascaccccrerracaassacsrrrssaraacarsaarrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTICTGGAGACTGTGAGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            craccaggagcccagagaacroccrccrdaagaagaagagcrcagaargrcacrcggcrccr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1473 ACGAAAGCAGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGA
                                      CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                      6314 ceradahdarerecadadadareadadarereahdaharearedeahdarereenadaa
                                                                                                                                                                               ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAAC 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCTCACCAAACAAAGTGCCCTACTATATCAACCACGAGGCCCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5294
                                                                                                                                                                                   1053
                                                                                                                                                                                                                                                                                                                                                                                                                                            6014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1533
                                                                                                                                                6254
                                                                                                                                                                                                                                                         1113
                                                                                                                                                                                                                                                                                              6134
                                                                                                                                                                                                                                                                                                                                                                      6074
                                                                                                                                                                                                                                                                                                                                                                                                         1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1413
                                                                                                                                                                                                                                                                                                                                 1173
                                        933
                                                                                                              993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \overset{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                      a
                                                                                                                                                                               ઠ
                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                           à
                                                                셤
                                                                                                   충
                                                                                           1952
                                                                                                                                  5295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             873 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813 GGTACCTACTACATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                  5414 GAGGCTTCTACAGGTGGCTGTGTGGAGGACCGTGTCAGACAGCTGCATGAAGCCCACAGGGA
                                                                                                                              cirridercergearceaecaerrecirriceaerreaerreaerreaegaeaaaaae
                                                                                             CTITIGGICCAGCATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                           <u>GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCAAGGGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                            CATCTCACCAAACAAAGTGCCCTACTATATCAACCACGAGACCCAAAC 5247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 19307;
                                                                                                                                                                     CATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAAC 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:

MEDIUW TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: Betentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION TOWNER: US/09/427,048A
FILING DATE: 21-0ct-1999
CLASSIFICATION: CURNOWN>
PRIOR APPLICATION NUMBER: 08/836,022
FILING DATE: CUNKNOWN>
ATTORNEY/AGENT INFORWATION:
NAME: Bark, Mary E.
REGISTRATION NUMBER: 31,215
REGISTRATION NUMBER: 31,215
REGISTRATION NUMBER: 31,215
REPERENCE/DOCKET NUMBER: GNVPN.008PCT
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215-540-9200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 10
CORRESSPONDENCE ADDRESS:
ADDRESSE: Howson and Howson
STREET: Spring House Corporate Cntr, P O Box 457
CITY: Spring House
STATE: Pennsylvania
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                      of Pennsylvania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                          Fisher, Krishna o.
Chen, Shu-Jen
Chen, Matthew
Weitzman, Matthew
TITLE OF INVENTION: Improved Adenovirus Virus and
Methods of Use Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1004; DB 3;
Pred. No. 1.1e-302;
0; Mismatches 115;
                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Trustees of the University Wilson, James M. Fisher, Krishna J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: CDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 10:
                                                                                                                                                                                                                                                           RESULT 4
US-03-427-048A-10/c
US-03-427-048A-10/c
Sequence 10, Application US/09427048A
Patent No. 6203975
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 19307 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 215-540-5818
ON FOR SEQ ID NO: 10:
NNCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 90.3%;
Matches 1073; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-427-048A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION
                           1833
                                                                                             1893
                                                                                                                                  5354
                                                                                                                                                                     1953
                                                                                                                                                                                                        5294
```

ò

```
3549 reagacegeacrinaaagaagaaaaaaaaaaaaaaaaaaaacaeeeess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Troacroscrosarcacarroamamanicaroscarrandagamenarrocaccam 3968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1784 AGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGC 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1089 AGGTTTCTGTGGATGATCGCCTTAAACAGCTTCAGGAAGCCCACAGAGATTTTGGACCAT 4148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4149 cercreadearrirerererenadereagreeagereeegrageaaagareearrieaeara 4208
                                                                                                                                                                                                                                                        3669 aaacagaarraacriccrigaggagagaggcccaaaagarragcaaagccargcgcaaagraaagr
                                                                                                                                                                                                                                                                                                                                                                3729 circrigagicaaagaaaarigggaagcrigaargcrigraacragcaariggcaaagc 3788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3969 rcaactrraaagiraaaacgergaargarrrarccagrcagcigrcrccactrgaccrec 4028
                                                                                                  --- GGAAGGACTAGAGAACTCTACCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1844 AGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAGGGACTTTGGTCCAG
                                                                                                                                                  3609 TITICITGGCIGATCAGCCAATIGAGGCCCCTGAAGAGGAGGAAACCTACAAICAA
                                                                                                                                                                                                                                                                                                              CTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3789 AAGTGGACAAAGGCATTGGAGAAACTCAGAGACCTGCAGGGAGCTATGGATGACCTGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4029 ATCCCTCTCTAAAGATGTCTCGCCAGCTAGATGACCTTAATATGCGATGGAAACTTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1904 CATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAA
                                                                                                                                                                                                        1424 CCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1604 TCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGCCGATCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              croacardaaggedagagreegreegaarggeriggaageedgagagagaerracrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TIGACITOTOCAAGAICACCICGAGAAAGICAAGGCACITOGAGGAAAATIGCGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGANAGAGGAGGTGAGGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                      AAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACC
1313 TCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1964 ACAAAGTGCCCTACTATATCAACCACGAGACTCAAAC 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4209 ATAAAGIGCCCTATTACATCAACCATCAAACACAGAC 4245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Tineley, Jonathon M
APPLICANT: Tineley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REPRENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1998-06-18
PRIOR PAPLICATION NUMBER: PCT/GB96/03156
PRIOR PILING DATE: 1998-12-19
PRIOR PILING DATE: 1998-12-19
PRIOR PILING DATE: 1998-12-19
PRIOR APPLICATION NUMBER: GB 952596.8
PRIOR PILING DATE: 1996-07-26
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-07-26
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 9
LENGTH: 10320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-091-501B-9; Sequence 9, Application US/09091501B; Patent No. 6518413
                                                                                                                                                                                                                                                                                                                   1484
                                                                                                                                                                                                                                                                                                                                                                                                                            1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1724
                                                                                                        1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1664
                                                                                                                                                     g
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ર્જ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3189 CCAGGGAACTCAAACAGCAGCAGGAGACATCCAGGCAGAAATTGATGCCCACAATGACA 3248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3129 cadroaardrochronddardcorchoarceddadarochtroacdaragrandrof 3188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             953 TAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1013 TTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATG 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3249 rarrradadecarredecegadaecaededadadaeceradadecrrrededadricredad 3308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3309 AGGCTACTATGCTTCAACATCGACTGGATGATATGAACCAAAGATGGAATGACTTAAAAG 3368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1133 AAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGC 1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3369 caaaarcrecraccarcaeeecccarrreeaeeccaeeeereaaaacreeaaaeeeaeree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1193 ACCITICICIGCAGGAACTICIGGIGIGGCIACAGCIGAAAGAIGATGAATTAAGCCGGC 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rgargricerragaagaacrigarcaaarggcrigaarargaaagargaagaggcriraagaaac 3488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1253 AGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCT 1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3489 AAATGCCTATTGGAGGAGATGTTCCAGCCTTACAGCTCCAGTATGACCATTGTAAGGCCC 3548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3069 recaegecrercecagagarcregaaacrecergaagregarecaagaagcagagca 3128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1073 ATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGA 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  833 IGCAACAGIICCCCCTGGACCIGGAAAAGIIICTIGCCIGGCTIACAGAAGAACAA 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        893 CTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAG 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ٠.
د
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: Description of Artificial Sequence: Chimeric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 6045;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
19.8%; Score 397; DB 4; Length 60.
Best Local Similarity 59.3%; Pred. No. 4.2e-113;
Matches 698; Conservative 0; Mismatches 470; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; LUCATION: (724)..(758)
; OTHER INFORMATION: Precise residue is left open
US-09-091-501B-7
                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 1998-06-18
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR FILING DATE: 1996-12-19
PRIOR PLING DATE: 1996-12-19
PRIOR APPLICATION NUMBER: GB 9525962.8
PRIOR PLING DATE: 1995-12-19
PRIOR PLING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 7
                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Tineley, Yonathon M
APPLICANT: Tineley, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1998-06-18
                                                                               Sequence 7, Application US/09091501B Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc feature
LOCATION: (724)..(758)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: CDS
LOCATION: (11)..(6037)
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ਨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ਨ੍ਹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

φ

```
Sequence 93, Application US/09976594

Sequence 93, Application US/09976594

GENERAL INFORMATION:
APPLICANT: Burness, Michael
APPLICANT: Burness, Michael
APPLICANT: Burness, Michael
APPLICANT: Burness, Michael
APPLICANT: Burness, Michael
APPLICANT: Buchbinder, Jenny
TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
FILE REPERENCE: PADO41 US
CURRENT APPLICATION NUMBER: US/09/976,594
CURRENT FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 1143
SOFTWARE: PERL PROGRAM
SEQ ID NO 93
ILBNGTH: 3915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1284 TCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGT 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      344 AATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACT 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1164 AGCCAGITCIGACCAGIGGAAGCGICIGCACCITTCICIGCAGGAACTICIGGIGGCT 1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1224 ACAGCTGAAAGATGAATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGT 1283
                                                                                                                                                                                                                         1784 AGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGC 1843
                                                                                                                                                                                                                                                                                                                                1844 AGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAG 1903
                                                                                                                                                                                                                                                                                                                                                                                     8364 AGGITTCTGTGTGATGATGGCCTTAAACAGCTTCAGGAAGCCCACAGAGATTTTGGACCAT 8423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8424 ccrcrcadcarrircrcrcracorcadrecadenderocadadanecarricaena 8483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     784 carcrarrererecresastreascreasecrirecrereceascacearresassas 843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   724 GCAACAGGAGAAGGAGACACATGCGGCCTTTATGGAAGAAGTCAAGTCTCGGGGCCCCTA 783
                1664 TIGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTC
                                                                8184 irodacicaciaciadarcacarradadadadarcaradacarrinadadadadadarracacaa
                                                                                                                    TGAAAGAGAAGGTGAGGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTC
                                                                                                                                                                    8244 icaacitiaaagitaaaacegigaatgarriaricagicagigigiciciccacitgaccigc
                                                                                                                                                                                                                                                                           8304 Arcccicrtaaagargreredecageradargacerraarargegarggaaacririae
                                                                                                                                                                                                                                                                                                                                                                                                                                    1904 CATCTCAGCACTTTCCTTCCACGTCTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1104 CATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 544 cargaarcrererregaarcaarcaaaraaaaaaarcrecaaaccreeceecrasa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     604 GGCCTTCTCAGACCACAGAGAAAGCTTCAGCTCCTCTTCAAGAGATTATTGACTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            664 cagccaaaagaargagagrigtcagcrcagcrgcccracaggggargrgcccrggr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 311.8; DB 4; Length 3915;
Pred. No. 1.4e-86;
0; Mismatches 357; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1964 ACAAAGTGCCCTACTATTCAACCACGAGACTCAAAC 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8484 ATAAAGTGCCCTATTACATCAACCATCAACACAGAC 8520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. 6673549 290344.1
US-09-976-594-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 60.0%;
Matches 538; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SULT 7
-09-976-594-93
                                                                                                                          1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                              g
                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 953 TAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1073 ATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGA 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAA 1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1373 TATTICIGACAGACAGCCTTT-----GGAAGGACTAGAGAAACTCTACCAGGAGC 1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7884 İTTİTCTİĞGCIĞATCAĞCCAAİTGAĞGCCCCTĞAAĞAĞĞĞCCAAĞAAĞAAĞCTACAATCAA 7943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1424 CCAGAGGAGCTGCCTCCTGAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGG 1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7944 aaacadaarraacrccrcadadaadadcccaaadaarraccaaagccardccaaacada 8003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAA 1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1544 AAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACC 1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTGGACAAGGCATTGGAGAAACTCAGAGACCTGCAGGGAGCTATGGATGACCTGGACG 8123
                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7464 CCAGGGAACTCAAACAGCAGATGCAGGACATCCAGGCAGAAATTGATGCCCACAATGACA 7523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7524 TATTTAAAAGCATTGACGGAAACAGGCAGAAGATGGTAAAAGCTTTGGGAAATTCTGAAG 7583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               circrichactichaganaharicchahagrcrahargcrananacaharicchahagc 8063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8124 CTGACATGAAGGAGGCAGAGTCCGTGCGAATGGCTGGAAGCCCGTGGGAGACTTACTCA 8183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7344 TGCAGGCCTCTCGCAGAGATCTGGAAAACTTCCTGAAGTGGATCCAAGAAGCAGAGACCA 7403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  reagaceedagriraaaggagaaaaagaararrererereaaareerereaceedeeceeag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   833 IGCAACAGITCCCCCTGGACCTGGAAAAGITTCTTGCCTGGCTTACAGAAGCTGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7404 CAGTGAATGTGCTTGTGGATGCCTCTCATCGGGAGAATGCTCTTCAGGATAGTATCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1013 TITATCACAACCIGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7584 AGGCTACTATGCTTCAACATCGACTGGATGATATGAACCAAAGATGGAATGACTTAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133 AAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7644 caaaarcrocrascarcaddeccarrrocadeccadecroadeagaagrocaderroc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1193 ACCTTTCTCTGCAGGAACTTCTGGTGTGCTACAGCTGAAAGATGATGAATTAAGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7704 IGATGTCCTTAGAAGAACTGATCAAATGGCTGAATATGAAAGATGAGACTTAAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7764 AAATGCCTATTGGAGGAGATGTTCCAGCCTTACAGCTCCAGTATGACCATTGTAAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1604 TCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                   9; Gaps
                                                                                                                                                OTHER INFORMATION: Description of Artificial Sequence: Full length OTHER INFORMATION: utrophin construct
                                                                                                                                                                                                                                                                                                                                                              Length 10320;
                                                                                                                                                                                                                                                                                                                                                            Query Match
19.8%; Score 397; DB 4; Length 10
Best Local Similarity 59.3%; Pred. No. 6.2e-113;
Matches 698; Conservative 0; Mismatches 470; Indels
                                                                                                                                                                                                                         NAME/KEY: misc feature
LOCATION: (724)...(758)
CHER INFORMATION: Precise residue is left open
US-09-091-501B-9
TYPE: DNA ORGANISM: Artificial Sequence
                                                                        NAME/KEY: CDS
LOCATION: (11)..(10312)
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1484
                                                    FEATURE:
                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   슝
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

1163

Gaps

584

CCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGT

165

```
136 cacaderierringdalganearenearakenegestearenegaenegaenenaneere 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            513 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACTGGTGGTGGTAGTTGATGAATCTAG 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124 idecelacacrecelederentricidade de la recelacació de desercidades de constantes de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la const
                                                                                                                                                                                                                                                                                                                          76 gaaggigaarreerraacrearargergergarrerggargaaacagreggagagageed 135
                                                                                                                                                                                              525 CAGGGICAAITCICICACICACIGGIGGIGGIAGIIGAIGAAICIAGIGGAGAICACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     585 AACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     453 TGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4 ricaccinecerceidecagaageneerricaagaacaraaaannigeaaannigeaaaneereeree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64 AGCTGAACAGGTGAAGGTAAATTCCTTAACTCACATGGTGGTGATTGTGGATGAAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    573 IGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAAGATCGATGGGC
16 CCTGCAAAACCTGCTTGAAGAACATAAAAGTTTGCAAAGTGACCTCGAAGCTGAGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 78.6; DB 4; Length 2
Pred. No. 1.6e-14;
0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/09091501B
) Sequence 4, Application US/09091501B
) Patent No. 6518413
) GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
) TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION UNMERR: US/09/091,501B
CURRENT APPLICATION NUMBER: DET/GB96/03156
PRIOR APPLICATION NUMBER: GB 9525962.8
PRIOR PILING DATE: 1996-12-19
PRIOR PILING DATE: 1996-12-19
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-10-24

NUMBER: PERCON SECOND NUMBER: GB 9622174.2

NUMBER: OF SEQ ID NOS: 15

SOCIUM OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SECOND OF SEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Sequence 6, Application US/09091501B
; Patent No. 6518413
; GENERAL INFORMATION:
; APPLICANT: Talley, Jonathon M
APPLICANT: Davies, Kay E
; TITLE OF INVENTION: Utrophin gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   633 AAACATCTGTAGATGGA 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               184 AGCTGTATGCCGCTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    645 ATGGA 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 CTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA ORGANISM: Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-091-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 9
US-09-091-501B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-091-501B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1082 GCCCATTGGGGATCTCTTCATTGATTCACTCCCAGAGCACATCCAGGCTATTAAGCTGTT 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1142. caaadaadaarricrccccardaaadargcadraagrradreargaarchicrcccccc 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1764 GCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCACTCTGGAAGACCTGAA 1823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1202 ACTIGCCATTICTGATGTGCACTTGTCAATGGAGAATTCCCAGGCCCTGGAACAGATCAA 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGC 1883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cereccaricanachaerachachecerenentenenenenenenenenenenenenenenen 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCACAGGGACTITGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTG 1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ccacceeaacrireseccresercacacacriricrerecercrereredaderrecers 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1584 GGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCA 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACT 1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1704 TCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCA 1763
1404 AGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCTGAGGAGAGAGCCCAGAATGTCAC 1463
                                                                                                                                                                                                                                                                              1464 TCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCA 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1524 CTCCGCTGACTGGCAGAGAAAAAAAGACCCTTGAAAGACTCCAGGAACTTCAAGA 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964 crigriciacidecación de carcacarda de caractera de contraca de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contración de contra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1022 GGGCATGGAGGAACTAAGGACTACTCTGAGCCAAGCTGAGGAGTGCGAGCCGACCTTGGGA 1081
                                                                                                             844 AGAGGACTCATTCTGAGGGAAGGATACCTCCCGGAAACAGGGGGTCCAGAATTCTCAG 903
                                                                                                                                                                                                                                                                                                                                                                                                           904 ccicririciarida de cada de cada de cada de cada de contrata de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATTCAACCACGAGACTCAAAC 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAAGAGCAATTTCACCCAATAAAGTTCCCTACTACATCAACCACCAGGCTCAGAC 1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
4.0%; Score 79.4; DB 4; Length 200;
Best Local Similarity 64.3%; Pred. No. 8.8e-15;
Matches 119; Conservative 0; Mismatches 66; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
ITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1998-06-18
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR APPLICATION NUMBER: GB 9525962.8
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SOFTWARE PATENTY OF 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: DNA
; ORGANISM: Rattus Bp.
US-09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 5
LENGTH: 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        පු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠ
                     ⋩
                                                                                                                                                  g
                                                                                                                                                                                                                                                                                      ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

ö

Gaps

123

ω

29,768

```
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ ID NO 13
LENGTH: 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 453 IGAICTIGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGA 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             513 ACAAGAACAAGTCAGGGTCAATTCTCTCTCACATGGTGGTGGTAGTTGATGAATCTAG 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 GGCTGAACAGGTGAAAGTAAATTCACTAACTCACATGGTGGTCATTGTTGTTGAAAACAG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                573 TGGAGATCACGCAACTGCTGCTTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 rigergiagas general da de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada del contrada de la contrada del contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada del contrada de la contrada de la contrada de la contrada del contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada de la contrada del contrada del contrada de la contrada de la contrada del contrada del contrada de la contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada del contrada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4; Length 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14, Application US/08232463
Sequence 14, Application US/08232463
Patent No. 5670367
GENERAL INFORMATION:
APPLICANT: DORNER, F.
TILES OF INVENTION: RECOMBINANT FOWLDOX VIRUS
NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS:
ADDRESSEE: Foley & Lardner
STREET: 1800 Diagonal Road, Suite 500
CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: USA
ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRAT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 78.6; DB 4
Pred. No. 1.6e-14
0; Mismatches 7
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091, S01B
CURRENT FILING DATE: 1998-06-18
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1995-12-19
PRIOR FILING DATE: 1995-12-19
PRIOR FILING DATE: 1996-10-26
PRIOR FILING DATE: 1996-10-26
PRIOR FILING DATE: 1996-10-27
NUMBER: OF SEQ ID NOS: 15
SEQ ID NO 6
LENGTHARE: Patentin Ver. 2.1
SEQ ID NO 6
LENGTH: 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
APPLICATION NUMBER: BP 91 114 300.6
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            633 AAACATCTGTAGATGGA 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184 AGCAGTATGCCGTTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
CORGANISM: Homo sapiens
US-09-091-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
GENERAL INFORMATION:
APPLICANT: Xiao, Xiao
APPLICANT: Liu, Paul
APPLICANT: Liu, Paul
TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED P
FILE REFERENCE: 00792
CURRENT APPLICATION NUMBER: US/09/687,875A
CURRENT FILING DATE: 2000-10-13
PRIOR APPLICATION NUMBER: 60/158,868
PRIOR PLING DATE: 2999-10-15
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PATENTIN version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                            113 TTTCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   173 ATTIGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTG 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 353 ITTITAATGGATCTCCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAG 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                413 AAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAC 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              233 GAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAA
                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      473 GCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTC
                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                       DB 1; Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 238;
                                                                                                                                                                                                                                                                                                                                  Query Match
3.8%; Score 76.6; DB 1; Length 7
Best Local Similarity 6.7%; Pred. No. 8.8e-13;
Matches 28; Conservative 236; Mismatches 155; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.2%; Score 63.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: pXX-C2 5' junction US-09-687-875A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-687-875A-13
; Sequence 13, Application US/09687875A
; Patent No. 6544786
REFERENCE/DOCKET NUMBER: 3C
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 836-9300
TELEFAX: (703) 683-4109
                                                           TELEFAX: (703)683-4109
TELEX: 899149
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
ORGANIȘM: Artificial Sequence
                                                                                                                                                                            TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                           ; TOPOLOGY: linear
; IMMEDIATE SOURCE:
; CLONE: pTZgpt-F18
US-08-232-463-14
```

us-09-845-416-6_copy_1000_3000.rni

```
NAME/KEY: misc feature
LOCATION: (10501)..(12000)
OTHER INFORMATION: n=a or c or g or
NAME/KEY: misc feature
LOCATION: (120001)..(13500)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (15001)..(30000)
OTHER INFORMATION: n=a or c or g or
NAME/KEY: misc_feature
LOCATION: (30001)..(45000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (90001)..(105000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (1).7(15000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc feature
LOCATION: (45001)..(60000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (60001). (75000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATION: (315001)...(33000)
OTHER INFORMATION: n=a or c or g or NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc feature
LOCATION: (19501). (210000)
OTHER INFORMATION: n=a or c or g or NAME/KEY: misc feature
LOCATION: (210001)..(225000)
OTHER INFORMATION: n=a or c or g or NAME/KEY: misc feature
LOCATION: (22501)..(24000)
OTHER INFORMATION: n=a or c or g or OCATION: (25001)..(240000)
OTHER INFORMATION: n=a or c or g or LOCATION: (240001)..(255000)
OTHER INFORMATION: n=a or c or g or OCATION: (240001)..(255000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (270001). (285000)
OTHER INFORMATION: n=a or c or g or
NAME/KEY: misc feature
LOCATION: (285001). (300000)
OTHER INFORMATION: n=a or c or g or
NAME/KEY: misc feature
LOCATION: (300001). (315000)
OTHER INFORMATION: (300001). (315000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc feature
LOCATION: (75001)..(90000)
OTHER INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (25501)..(270000)
OTHER INFORMATION: n=a or c or
                                                                                              ORGANISM: Chlamydia pneumoniae
NUMBER OF SEQ ID NOS: 6849
SEQ ID NO 1
LENGTH: 1230025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1. Application US/09198452A
Patent No. 655244
GENERAL NO. 655244
GENERAL INFORMATION:
APPLICANT: Griffais, R.
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragmente
TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preve
TITLE OF INVENTION: and treatment of infection
FILE FERENECE: 9710-003-999
CURRENT APPLICATION UNMERR: US/09/198,452A
CURRENT FILING DATE: 1998-11-24
                                                                            CAAGTGGAGTGA 1124
                                                                                                                     169 tricgcaccacactacretracaagacerricgaraacaraaacricaacrecaacaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219 AAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCA 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | :| :: :: :: | | | :: :: | | 387 GSWGGYRWGGRGWAAAAAAAGSYCGMTSYTSGSKWTGRKGSMTKRKRWMTY 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339 CAATITACATAGAGITITTAATGGATCTCCCAGAATCAGAAACTGAAAGAGTTGAATGACTG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          327 SGWWTSYKCTKIGKKYTGWKSKKTRWTCTSWRKYMWMMSGCWARSMKSWARSWYSMMAC 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   267 WCMMSASAYRARRSMYGARRSMMRAGAGWWRARRGKKRARGKSSMMRSKMSSMRMSAGKA 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    459 TGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGA 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     207 RMCRRWMWSCRRMSYSCMGSKCMSCRGTCAKMWRYARYARRYASSMGKYMMGCRWCYAKC 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399 GCTAACAAAAACAGAAAGAAAGAAACAAGGAAAATGGAGGAAGAAGACCTCTTGGACCTGATCT 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 2.3%; Score 46.2; DB 4; Length 505; Best Local Similarity 17.4%; Pred. No. 0.00042; Matches 54; Conservative 131; Mismatches 124; Indels
                            Indels
                                                                            1065 TTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACT
                                                                                                                                                                                                                                                                                                              US-09-621-976-15639/c

Sequence 15639, Application US/09621976

Sequence 6639063

GENERAL INFORMATION:
APPLICANT: Unmass Milne Edwards, J.B.
APPLICANT: Glordano, J.Y.
TITLE OF INVENTION: ESTS and Encoded Human Proteins.
FILE REPRENCE: GENSET.054PR2

CURRENT APPLICATION NUMBER: US/09/621,976

CURRENT APPLICATION NUMBER: US/09/621,976

WUMBER OF SEQ 1D NOS: 19335

SOFTWARE: Patent.pm
     Pred. No. 8.8e-10;
0; Mismatches 4
     Best Local Similarity 94.3%;
Matches 66; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | : |:::::
147 ARMYGYYRSRS 137
                                                                                                                                                                         1125 ACTTCGGAAA 1134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519 ACAAGTCAGGG 529
                                                                                                                                                                                                                         229 ACTICGGAAA 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
CORGANISM: Homo sapiens
US-09-621-976-15639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 15639
LENGTH: 505
                                                                               ò
                                                                                                                                                                           à
                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
```

us-09-845-416-6_copy_1000_3000.rni

```
IE/KEY: misc feature
AATION: (510001)..(525000)
IER INFORMATION: n=a or c or g or t
EE/KEY: misc feature
AATION: (52501)..(54000)
IER INFORMATION: n=a or c or g or t
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
IE/KEY: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ION: (67501)..(690000)
INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AME/KEY: misc feature
OCATION: (465001)..(480000)
THER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ION: (555001)..(570000)
INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WE/KEY: misc feature
OCATION: (570001)..(585000)
THER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AME/KEY: misc feature
OCATION: (450001)..(465000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AME/KEY: misc feature
OCATION: (495001)..(510000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ION: (58501)..(600000)
INFORMATION: n=a or c or g or
                                                                                                                                                                         or
                                                                                                                                                                                                                                                   or
                                                                                                                                                                                                                                                                   NAME/KEY: misc feature
LOCATION: (390001)..(405000)
DTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                          TAME/KEY: misc feature
LOCATION: (405001)..(420000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
LOCATION: (420001)..(435000)

THER INFORMATION: n=a or c or g or
NAME/KEY: misc_feature
COCATION: (435011)..(450000)

THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION: n=a or c or g or
                          ö
                                                                    LOCATION: (34501)..(360000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7AME/KEY: misc_feature
.OCATION: (645001)..(660000)
)THER INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ION: (615001)..(630000)
INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /KEY: misc feature
IION: (630001)..(645000)
R INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /KEY: misc feature
IION: (660001)..(675000)
R INFORMATION: n=a or c or g
                                                                                                                                                                                           NAME/KEY: misc feature
LOCATION: (37501)..(390000)
THER INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ION: (600001)..(615000)
INFORMATION: n=a or c or g
                                                                                                                    NAME/KEY: misc feature
LOCATION: (360001)..(375000)
OTHER INFORMATION: n=a or c or g
                          THER INFORMATION: n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AME/KEY: misc_feature
DCATION: (480001)..(495000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OCATION: (690001)..(705000)
(330001)..(345000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      feature
                                               NAME/KEY: misc feature JOCATION: (34501)..(3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ME/KEY: misc_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AME/KEY: misc_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AME/KEY: misc
```

```
RESULT 15
US-09-107-532A-1186
is Sequence 1186, Application US/09107532A
is Sequence 1186, Application US/09107532A
j Patent No. 6583275
j GENERAL INFORMATION:
i GENERAL INFORMATION:
i APPLICANT: Lynn A Doucette-Stamm and David Bush
j APPLICANT: Lynn A Doucette-Stamm and David Bush
i TITLE OF INVENTION: WUCLETC ACID AND AMINO ACID SEQUENCES RELATING TO
TITLE OF INVENTION: BUTEROCOCCUS FABCIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      656477 AATTAGAAGAAAGAGAAGAAGAAGAAATTGAGGATATCAAAGACTCAGATACAAAAT 656418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302 GOGBATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGG 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242 AATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGAT 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
2.2%; Score 44; DB 4; Length 1230025;
Best Local Similarity 53.5%; Pred. No. 0.57;
Matches 92; Conservative 0; Mismatches 80; Indels 0;
                                      NAME, ARY: MISSOLIA. (720000)
CTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (720001). (735000)
OTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (735001). (750000)
OTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (750001). (765000)
OTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (765001). (780000)
OTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (76501). (780000)
OTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (76501). (780000)
OTHER INFORMATION: n=a or c or g or t
NAME, KRY: miss feature
LOCATION: (780001). (795000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature
LOCATION: (90001). (915000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WANE/KEY: misc feature
LOCATION: (840001)..(855000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (855001)..(870000)
JTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (870001)..(885000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
LOCATION: (885001)..(900000)
OTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (795501)..(810000)
JTHER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (810001)..(825000)
THER INFORMATION: n=a or c or g
n=a or c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (82501)..(840000)
OTHER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
```

ö

```
COUNTER COLURY

ZIP: 02554

COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
COMPUTER: PC
OPERATING SYSTEM: «Unknown>
SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: 05/09/107,532A
FILING DATE: 30-Jun-1998
PRIOR APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/085,598
FILING DATE: 10-Jun-1998
APPLICATION NUMBER: 60/085,598
FILING DATE: 10-Jun-1998
APPLICATION NUMBER: 60/085,598
FILING DATE: 10-Jun-1998
APPLICATION NUMBER: 60/085,598
FILING DATE: 10-Jun-1998
ATTORNEY/AGENT INFORMATION:
NAME: Ariniello. Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: 40,489
REFERENCE/DOCKET NUMBER: 40,489
REFERENCE/DOCKET NUMBER: 40,489
REFERENCE/OCKET NUMBER: 40,489
REFERENCE/OCKET NUMBER: 40,489
RETERENCE/DOCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
RETERENCE/OCKET NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER: 40,489
REGION NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature;
CCATION: (B) LOCATION 1...1179;
SEQUENCE DESCRIPTION: SEQ ID NO: 1186:
STREET: 100 Beaver Street CITY: Waltham STATE: Massachusetts COUNTRY: USA
```

602 agchaagahahaahdarrindarcdarcadacaahadahaharddadaracdarcddagaa 661 Gaps Query Match
2.2%; Score 43.4; DB.4; Length 1179;
Best Local Similarity 50.7%; Pred. No. 0.0058;
Matches 104; Conservative 0; Mismatches 101; Indels 0; ò ద

431 IGGAGGAAGACCICTIGGACCIGAICTIGAAGACCIAAAACGCCAAGIACAACAIA 490 662 inciracakorocircorococorricos et de antigo de antigo de antigo de de antigo de ant

> d ð g

Search completed: April 5, 2004, 08:24:49 Job time : 100.041 secs

```
1120 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1000 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1060 GTATTATCGTGGCTTCTTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAAT 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GGCAGTTCATTGATGGAGGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 60/200,777-
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 6
LENGTH: 3999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 100.
Matches 2001; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Homo sapiens
US-09-845-416-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{\diamond}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 26, Appl
Sequence 34, Appl
Sequence 29, Appl
Sequence 25, Appl
Sequence 36, Appl
Sequence 27, Appl
Sequence 41, Appl
Sequence 41, Appl
Sequence 44, Appl
Sequence 44, Appl
Sequence 44, Appl
Sequence 27, Appl
Sequence 27, Appl
Sequence 27, Appl
Sequence 27, Appl
Sequence 27, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 6, Appli
                                                                                                                                                                                        5, 2004, 04:53:30; Search time 485.207 Seconds (without alignments) 15454.047 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                     1 ggcagttcattgatggagag.......tcaaccacgagactcaaaca 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Published Applications NA: *

1: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq: *

2: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq: *

3: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq: *

4: /cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq: *

5: /cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq: *

6: /cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq: *

7: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq: *

8: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq: *

9: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq: *

10: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq: *

11: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq: *

12: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq: *

13: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq: *

14: /cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq: *

15: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq: *

16: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq: *

17: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq: *

18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq: *

18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq: *

18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq: *

18: /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq: *
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-845-416-6
US-09-845-416-38
US-09-845-416-39
US-09-845-416-39
US-09-845-416-35
US-09-845-416-35
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-10-149-736-41
US-10-149-736-41
US-10-149-736-44
US-10-149-736-44
US-10-149-736-44
US-10-149-736-44
US-10-149-736-44
US-10-149-736-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Potal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2470430 seqs, 1873665578 residues
                                                                                                                                                                                                                                                                                                                    US-09-845-416-6_COPY_1000_3000
2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                              nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Winimum DB seq length: 0 daximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3999
4966
4990
3858
4885
4885
5060
4182
5149
5149
11058
11058
13957
                                                                                                                                                                                        April
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.0001
0.0001
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20001
20001
100001
100001
1100001
1100001
1110000
1110000
1110000
1110000
1110000
1110000
1110000
1110000
1110000
1110000
1110000
                                                                                                                                                                                                                                                                                                                          ritle:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                     ,
                                                                                                                                     OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jatabase :
                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46010007654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
```

Gaps ö

DB 10; Length 3999; 0; Indels

100.0%; Score 2001; 100.0%; Pred. No. 0; iive 0; Mismatches

16	18	59.1	395	6	-09-880-107-	quence 2284	ď.
17	28	59.1	395	15	3-10-149-736-1	equence 1,	7
18	18	σ	406	12	-10-342-887-43	equence 434	ď
19	18	ത	408	12	-10-342-887-	equence 981	dd
20	1182.6	1 6	80	15	-10-341-434-10	equence 108	day
212	1	o	216	10	-09-845-416-	ence 4,	1
20	1182	0 11	3 (0	-09-845-416-1	equence 10,	[a
2.5	1182	, σ	9	20	09-845-416-3	30	ű
20	1011	1 0	, ;		-10-149-736-4	40	ď,
7 0	1012		3 5	10	-09-845-416-	12	20,
1 0	9 10		1 4	1 -	-09-845-416-3	3	507
0.0	100		, a	2 5	-10-149-736-2	2	17
- α - α	4		1831	1 -	-09-845-416-1	Sequence 13, Appl	d
0 0	727) 4 L	1 -	-10-149-736-	39	ď,
30	678.4	'n	47	2	-09-845-416-3	32	ď
31		Ε,	6	10	-09-845-416-	m	ij
32	677	ω.	99	2	-09-845-41	7,	77
33	666.4	ω.	4	10	-09-845-416-1	14	ď
34		2	43	10	9-845-416-	15	Įď
35	408.2	ö	109	15	149-736-	4	λį
30		ď	030	6	-782-378A-	ű,	겁
37	397	φ.	30		-149-736		77
80	387	φ.	38		0-149-736-3	32	Įď.
9 60	385	6	53		-101-510-	.99	ddy
4 0	350		134		9-845-416-1	17	ď
4.1	348	ζ.	34	15	0-149-736-3	31	ď
. 4	330	9	m	15	10-149-736-	equence 9,	i,
. 4 . w	327		327	15	S-10-149-73	equence 8,	ij
4	324	ی	S	15	8-10-149-736-3	equence 33	ď
4 4	3005	· (c	10	2	8-10-220-120-	equence 15	da.
3	4		ì	ł		•	1
					ALLGNMENTS		
THISE	-						
11S-09-81	145-416-6				-	,	
almag.		hoolicat	nS	098	15416		
, Publication	· E	No. US20030	00301713	12A			
GENER	F	SMATION:					
, APPL	ICANT: X	CIAO, X1	LAO				
TITE	TITLE OF INV	INVENTION: D	: DNA SEQUENCE	OOE	NCE ENCODING A DYSTROPHY	MINIGENE AND USE	
; TITE	E OF INT	/ENTION	THERE	O.			
, FILE	7	CE: DE	FERENCE: DELL42		217 270/00/0		
CURRENT	CENT AFFI		NOMBER OF SECTION SECT		707/040/47		
. PRIOR	DE APPLICA	ATTON	APPLICATION NUMBER:	607	200,777		

සු දු

8 6 8 6 8 6 8 6 8 6 8 6 8 6 8

1321 GANTICARGENCTITCCRGCAGITCTCAGACAGITCATCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCAGACTTCTCAGACTTCTCAGACTTCTCAGACTTCTCAGACTTCTCAGACTTCTCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCCAGACTTCTCCAGACTTCTCCCAGACTTCTCCAGACTTCTCCAGACTTCTCCCAGACTTCTCCAGACTTCTCCAGACTTCTCCTCCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCTCCTCCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCCAGACTTCTCAGACTTCACACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACACATACACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACTTCACAGACACTTCACAGACTTCACAGACACTTCACAGACTTCACAGACACTTCACAGACACTTCACAGACACTTCACAGACACTTCACAGACACT	Sequence 28, Application US/0945416; publication No. US20303171312A1 GENERAL INFORMATION: APPLICANT: XTAG, XIAO TITLE OF INVENTION: THEREOF FILE REPERENCE: DELIA2 CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30 PRIOR PILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 28 LENGTH: 4966 TYPE: DNA OUETY MATCH QUETY MATCH QUETY MATCH 100.0%; SCOIE 2001; DB 10; Length 4966;
AATTATCAGAAGATGAAATATTCTACAATTGGAAAGATAAGCTGAATTGAGAACAGA AAATTATCAGAAGATGAAGAATTGAAATTCTACAAATTGGAAAAGCTGAATTCAAGAATTGAGAACAGA AAATTATCAGAAGATGAAGAACTGAAGTACAAGGAATTTACATAAATTCAAGA AAATTATCAGAAGATGAAGAACTGAAGAAATTCATAAGAATTTTACATAAGAATTTTAAGAAATTCATAAGAATTTTAAGAAATTCAAGAATTTTAAGAAATTCAAGAATTTTAAGAAATTTAAGAAATTTAAGAAATTAAGAAATTTAAGAAATTTAAGAAATTTAAGAAATTTAAGAAATTTAAGAAATTTAAGAAATTAAGAAATTTAAGAAATTTAAGAAAATTAAGAAAATTAAGAAAATTAAGAAAAAA	1960 CTGATGAAACAATGCCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC 2019 1021 AACCTGGATGAAACAGCCCAAAAAATCCTGAAGATCCTGGAAGGTTCCGATGATGCAGTC 1080 2020 AACCTGGATGAAACAGCCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC 2079 1081 CTGTTACAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGTTCCGAAGATGCAGTC 2079 1081 CTGTTACAAAGACGCTTTGGATAACATGAACTTCAAGTGGAACTTCGGAAAAAGTC 2079 1141 CTGAACATTAGGTTAGGATAACATGAACTTCAAGTGGAACTTCGGAAAAAGTC 2139 1141 CTGAACATTAGGTCCCATTTGGAAGCTTCTAACTTCAAGTGGAAGCGTCTGCACCTTTCT 1200 1141 CTGAACATTAGGTCCCATTTGGAAGCCAGTTCTAACAGTGGAAGCGTCTGCACCTTTCT 2199 1201 CTGCAGGAACTTCTGGTGGCTACAGGTTCTAACAGTGGAAACGTTCAACAGTGCACCCTTTCT 2199 1201 CTGCAGGAACTTCTGGTGGCTACAGGTTCTAAAAGTGGAAATTAAGCCGGCAGCACCTT 229 1201 CTGCAGGAACTTCCGGTGGCTACAGAGATGATGATAAAGCCGCAGCACCTT 229 1261 ATTGGAGGCGACTTTCCAGCAGTTCAGAAGATGATGATAAAGCCGCAGCACCTTCAAGAGCTTCAAGAGCGCACTTCAAGAGCTTCAAAAGTGATGATGATAAAGCCGCAGCACCTTCAAGAGGTTCAAAAGTTAAAGCCGCAAGCACTTCAAGAGCTTCAAAAGTTAAAGCCGCAAGCACTTCAAGAGCTTCAAAAGTTAAAGCCGCAAGCACTTCAAAAGTTCAAAAGTTAAAGCCGCAAGCACTTCAAAAGTTCAAAAATTAAGCCGCAAGCACTTCAAAAATTAAACCAACAACATTCAAGAGCCTTCAAAAAGTTCAAAAAATTAAACCAACAACACTTCAAAAATTAAACCAACAA

ර දු ර

8 8 8

```
1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3700
                                                                                                                                                                                                                                                                                    2920
                                                                                                                                                                                                                                                                                                                 1200
                                                                                                                                                                                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                                                                                                                                                                                   3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3400
                                                                                                                                                                                                                                                                                                                                            2980
1561 AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAG 2620
                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACGICAATGACCITGCTCGCCAGCITACCACITITGGGCATTCAGCTCTCACGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT
                                                                                                   GAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGAACCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGIGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT
                                                                                    GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAAGAG
                                                                                                                                           CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC
                                                                                                                                                                       AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                              2801 AACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                                                          CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT
                                                                                                                                                                                                                                                                           CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACTTTCT
                                                                                                                                                                                                                                                                                                                                         2921 CTCAACATTAGGTCCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACTTTCT
                                                                                                                                                                                                                                                                                                                                                                       ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3101 GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1381 ACAGAGCAGCCTTTGGAAGGACTAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1441 GAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1501 GAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                       1621 Trececerdeacerdeaaaagrrrerreecerdecrracagaagergaaacaacrecaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3641
                                                                                                                                                                                                                                                                                                                                                                                                                                 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861
                                                                                       901
                                                                                                                                              196
                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                             1081
                                                                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                                                                                          1201
                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         장염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                           g
                                                                                                                                           ò
                                                                                                                                                                   g
                                                                                                                                                                                                    à
                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                               5 6
                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccracrcadacrdrracrcrddrdacacaaccrdrddrrracraagdaacrdccarcrcc 2560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2200
                                                                                                                                                                                                                                                                                                                                                             1900
                                                                                                                                                                                                                                                                                                                                                                                                                  1901 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 1960
                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAG 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                             AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCTCCAGAATCAGAAACTGAAAAGAGTTGACTGGCTAACAAAAAAAGAGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCACATGGTGGTGGTAGTTGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2321 ACTCACATGGTGGTGGTAGTTGATGTACTAGTGGAGATCACGCAACTGCTGTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGGCACAAGGAGAGTTTCTAAT
                                                                                                                                                                                                                                                                                                                                                     GIATTATCGIGGCTTCTTTCTGCTGAGGACACATTCCAAGGACAAGGAGAATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACAACTTAAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAAAAACACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGTTCTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTACTCAGACTGTTACTCTGGTGACACACCTGTGGTTACTAAGGAAACTGCCATCTCC
                                                                                                                                                                                                                                                                                                                                                                                        GATGTGGAAGTGGTGAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAGAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC
                                                                                                                                                                                                                                                                             GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                 Gaps
      DYSTROPHY MINIGENE AND
                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                      DB 10; Length 4990;
                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                   Query Match
100.0%; Score 2001;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 2001; Conservative 0; Mismatches
    TITLE OF INVENTION: DNA SEQUENCE ENCODING A I TITLE OF INVENTION: THEREOF TITLE OF INVENTION: THEREOF CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30 PRIOR PILING DATE: 2000-04-28 NUMBER: OF SEQ ID NOS: 36 SEQ ID NO 34
         4
                                                                                                                              ; SEQ_ID_NO_34
; LENGTH: 4990
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-845-416-34
                                                                                                                                                                                                                                                                                                                                                                1841 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                              н
                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
```

d

ò

qq à d à d à g ò qq 8 g $\stackrel{\sim}{\circ}$ В ઠે g ठ 요 à ď ò БЪ ठे g à

ò

**************************************	Db 1540 ACTCAC	ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA 1599
TCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTAT 376	Qy 601 GAACAA Db 1600 GAACAA	GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC 660
<pre>2y 1981 ATCAACCACGAGACTCAAACA 2001 2y</pre>	Qy 661 TGGGTT Db 1660 TGGGTT	TGGGITCTITTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT 720
ISSULT 4 13-09-845-416-9	Oy 721 CCTACT	CCTACTCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCC 780
	781	AAACTAGAAAAGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAG 840
ind A DisirOffii Minidana fub os	8 4 1 1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	900
CURRENT FILTUR DAILS 2001-04-30 PRIOR APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver: 2.1	901	
SEQ ID NO 9 LENGTH: 3858 TYPE: DNA ORGANISM: Homo sapiens		CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC 1020
ore 1709; DB 10; Length 3858; ed. No. 0;	OY 1021 AACCTG	AACCTGGÄTGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC 1080
vative 0; Mismatches 0; Indels 141; Gaps TTGATGGAGAGTGAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA	Oy 1081 CTGTTA Db 1939 CTGTTA	CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT 1140
105	Qy 1141 CTCAAC Db 1999 CTCAAC	CTCRACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT 1200
1060 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGAGAGATTTCTAAT 121 GATGTGGAAGTGATGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA	Qy 1201 CTGCAG Db 2059 CTGCAG	CTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA
1120 GAIGIGGAAGIGGIGAAAGACCAGITICATACICATGAGGGGTACATGATGGATTIGACA 181 GCCCATCAGGGCCGGGTIGGTAATATICTACAATTGGGAAGTAAGCTGATTGGAAACAGGA	Qy 1261 ATTGGP Db 2119 ATTGGP	ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAAGGATGTACATAGGGCCTTCAAGAGG 1320
1180 GCCCATCAGGGCCGGGTTGGTAATATCTACAATTGGGAAAGTAAGCTGATTGGAAAACAGA 241 AAATTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA [Qy 1321 GAATTG Db 2179 GAATTG	GAATTGAAAACTAAAGAACTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG 1380
1240 AAATTATCAGAAGATGAAGAAACTGAAGAACAGAGAGAAGAATTACAAATTCAAGA 301 TGGGAATGCCTCAGGGTAGCTAGCATGAAAAACAAAGGAATTTACATAGATTTAAATG	Qy 1381 ACAGAG 	ACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT 1440
1300 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG 1359 2y 361 GATCTCCAGAATCAGAAACAGTTGAATGACTGGCTAACAAAAACAGAAAAGA 420 34 1360 GATCTCCAGAATCAGAAAAAGTTGAATGACTGGCTAACAAAAAAAA	Oy 1441 GAGGAC Db 2299 GAGGAG	GAGGAGAGAGAGAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 1500
421 ACAAGGAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA 421 ACAAGGAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA [Qy 1501 GAGTGG Db 2359 GAGTGG	GAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTT 1560
1420 ACARGGARARIGGAGGARGACICIIGGACIIGALIIIGAAGACCIIGAAGACCIIGAAGACCIIGAAGACCIIGAAGACCIIGAAGACCIIGAAGACCIIGAAGACCIIGAAGAACAAGACAAGAACAAAAAA	Oy 1561 GAAAGA Db 2419 GAAAGA	GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACTCGAGCTGCGCCCAAGCT 1620
1480 CAACAACAIAAGGIGCITCAAGAAGAICIAGAACAAGAACAAGICAGGGICAAIICUCIC 1539 27 541 ACTCACAIGGIGGIGGIGGITGAIGAAICIAGIGGAGAICACGCAACIGCIGCITIGGAA 600 28	Oy 1621 GAGGTC Db 2479 GAGGTC	GAGGIGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGGT 1680

2057 TGGGBATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTATTG 2116 361 GATCTCCAGAATCAGAAACTGAAAGGAATGACTGGCTAACAAAAAGAAGAAAGA	TOTALTCARACTGTTACTGGTGACCACCTGGGTTACTAAGGGAACTGCCATCTCC 180 181
8 8 8 8 8 8 8 8 8 8 8 8 8	8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6
Qy 1681 CACCTCGAGAAAGTCAAGGCACTTCGAGGAAATTGCGCCTCTGAAAGAGAACGTGAGC 1740 Db 2539 CACCTCGAGAAAGTCAAGGCACTTCGAGAAATTGCGCCTCTGAAAGAGAACGTGAGC 2588 Qy 1741 CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC 1800 Db 2599 CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC 2658 Qy 1801 CTCAGCACTTGGAAGACTGAACCACAGATGGAAGCTTCTGCAGGCACTTCACCGTATAAC 2658 Qy 1861 CGAGTCAGAGACTGAAAGACCAGATGGAAGCTTCTGCAGGACTTTCTT 1920 Db 2659 CTCAGCACTCTGGAAGACCTGAAAGACCAGAAGAAGACCTTGCAGCATTCTTTTTT 1920 Db 2659 CTCAGCACTCTGGAAGACCTGAAGACACCAGATCTGCAGCATTCTTTTTTT 1920 CD 11811 CGAGTCAGGAGCTTGAAGCCCACAGGAGCTTTGGTCCAGCATCTCTGCAGCATTTCTTT 2778 CY 1921 TCCACGTCTGTCCAGGGTCCCTGGGAACTTTGGTCCAGCATCTCAGCACTTTCTT 2778 CY 1921 TCCACGTCTGTCCAGGGTCCCTGGGAACATCTCGCCAAACAACAACTGTTCTTTTTTTT	PRESULT 5 19.09.461-416-29 19.09.461-416-29 19.09.461-416-29 19.09.461-416-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-29 19.00-461-410-410-410-410-410-410-410-410-410-41

480

420

2259

540

2079

360

240

2379

600

2439

2457

셤

ð

g

à

차 유

경. 원 ₹ g 8 g à g à

```
AACCTGGATGAAAACAGCCAAAAATCCTGAGATCCTGGAAGGTTCCGATGATGCAGTC 2718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CIGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        crgargaaacaarggcaagaccrccaaggrgaaarrgaagcrcacacagargrraarcac 2658
.840 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT 1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661 TGGGTTCTTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721 CCTACTCAGACTGTTACTCTGGTGACACACTGTGGTTACTAAGGAAACTGCCATCTCC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACTTTCT
                                                                                                                                                                                                                                                                                                                                                                   3380 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CIGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAAGTCT
                                                                                                                                                        AAATTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                           TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATG
                                                                                                                                                                                                                                                   receaarcercaeeeraecraecareeaaaaacaaaecaarrracaraeaerrrraare
                                                                                                                                                                                                                                                                                                             2140 GATCTCCRGAATCAGAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                               ACAAGGAAAATGGAGGAAGAGCTCTTGGACCTGATCTTGAAGACCTAAAAAGGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                               CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                             2260 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541 ACTCACATGGTGGTGGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781 AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----ACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2479 trececeredaceredaaaagrirerieceredeerracadaageredaakeaaeredaar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGGAGTAAAAGAG
                                                   gecearcagecegerregratariteracaarreggaagraactearregaacaga
                                                                                                                                                                                                                                                                                  GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                             GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                 GATGTGGAAGTGGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2440 recerririacaácac---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1081
                                   121
                                                                 1900
                                                                                               181
                                                                                                                             1960
                                                                                                                                                                                           2020
                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                        2080
                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               중 <sup>유</sup>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                 8 8
                                                                                             8
                                                                                                                     g
                                                                                                                                                          ò
                                                                                                                                                                                   a
                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                    ठे
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1839
                                                                                                                                                                                                                                                                                                                                                              CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC 3415
                                                                                                                                                                                                                                                                                                                                                                                                                     CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3175
                                                                                                                                                                                                                                                                                                       CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAATTGCGCCCTCTGAAAGAGAACGTGAGC 3355
                                                                                                                                                                                                                                                                                                                                      CACGICAAIGACCIIGCICGCCAGCIIACCACIIIGGGCAIICAGCICICACCGIAIAAC 1800
                                                                                                                                                                                                                                                                                                                                                                                                     CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATTATCGTGGCTTCTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT
                                             3056 GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                   GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCT
                                                                                                                                                                  GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCCATTGACTCTCTCCAAGAT
                                                                                                                                                                                                                                       CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 35, Application US/09845416
Publication No. US20030171312A1
GENERAL INPORMATION:
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT FILING DATE: 2001-04-30
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 4848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 85.4%; Score 1709; DB 10; Best Local Similarity 93.0%; Pred. No. 0; Matches 1860; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Archaccaccacacacrcaaaca 3616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Homo sapiens
US-09-845-416-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -09-845-416-35
                                                                                                                                                 1561
                                                                                                                                                                                3176
                                                                                                                                                                                                                                                                                                            3296
                                                                                                                                                                                                                                                                                                                                                                          3356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1981
                                                                                     1501
                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                            1681
                                                                                                                                                                                                                                                                                                                                        1741
                                                                                                                                                                                                                                                                                                                                                                                                        1801
                                                                                                                                                                                                                                                                                                                                                                                                                                      3416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
```

ઠે

ò 유 1200

2538

900

2478

2457

2598

```
GTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGACTCCCAAGGGAGTAAAAGAG
       ; LENGTH: 5060
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-845-416-36
SEQ ID NO 36
                                                                                                                                                                                                                                              2172
                                                                                                                                                                                                                                                                                                                                                                   2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2670
                                                                                                                                                                                  121
                                                                                                                                                                                                      2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2751
                                                                                                                                          61
                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                                                                                                     셤
                                                                                                                                          ò
                                                                                                                                                          ద
                                                                                                                                                                                ઠે
                                                                                                                                                                                                   셤
                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                              2898
                                                  1320
                                                                                        1380
                                                                                                            3018
                                                                                                                                 1440
                                                                                                                                                    3078
                                                                                                                                                                        1500
                                                                                                                                                                                                                                                         1620
                                                                                                                                                                                                                                                                            3258
                                                                                                                                                                                                                                                                                                1680
                                                                                                                                                                                                                                                                                                                                        1740
                                                                                                                                                                                                                                                                                                                                                           3378
                                                                                                                                                                                                                                                                                                                                                                                                  3438
                                                                                                                                                                                                                                                                                                                                                                                                                                          3498
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1920
                                                                                                                                                                                                                              CACGICAATGACCTIGCTCGCCAGCTIACCACTITGGGCAITCAGCICTCACCGIAIAAC 1800
                                                                                                                                                                                                                                                                                                                                                                                                                     CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTCTG
                                                                                                                                                                        GAGGAGAGACCCAGAAIGTCACTCCGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                GAGGTGATCAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCCAAGAT
                                                                                                                                                                                                                                                                                                                                                           caccrcdagaaagrcaaggcacrrcgaggagaaarrgcgccrcrgaaagaagaacgrgagc
                                                                                                                                                                                                                                                                                                                                                                                           CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                         crcaecacrcrasasaccrsaacacacacacaasacrrcracagacacacacacacaacaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ceaercaeecaecreateaaecccacaeeacrrreerccaecarcrcaecarrrcrr
                                                                    ATTGGAGGGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG
                                                                                                                                                                                                                                                         GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                                                                                                                                                                                                                                    GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG
                                                                                                                                 ACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT
                                                                                                                                             GAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                GAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTT
                                                                                                                                                                                                                                                                                                                                        CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT
          CTGCAGGAACTICTGGTGTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 36, Application US/09845416
Publication No. US20030171312A1
GENERAL INFORMATION

GENERAL INFORMATION

TITLE OF INVENTION: THEREOF

FILE REPERENCE: DE1142

CURRENT APPLICATION NUMBER: US/09/845,416

CURRENT APPLICATION NUMBER: 60/200,777

PRICR APPLICATION NUMBER: 60/200,777

PRICR APPLICATION NUMBER: 60/200,777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAACCACGAGACTCAAACA 3639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
                                                   ATTGGAGGCGACTT'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 7
US-09-845-416-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3559
           1201
                              2839
                                                   1261
                                                                      2899
                                                                                          1321
                                                                                                             2959
                                                                                                                                  1381
                                                                                                                                                      3019
                                                                                                                                                                         1441
                                                                                                                                                                                             3079
                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                    3139
                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                            3199
                                                                                                                                                                                                                                                                                                1621
                                                                                                                                                                                                                                                                                                                     3259
                                                                                                                                                                                                                                                                                                                                        1681
                                                                                                                                                                                                                                                                                                                                                           3319
                                                                                                                                                                                                                                                                                                                                                                               1741
                                                                                                                                                                                                                                                                                                                                                                                                   3379
                                                                                                                                                                                                                                                                                                                                                                                                                       1801
                                                                                                                                                                                                                                                                                                                                                                                                                                           3439
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3619
                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
           ò
                             셤
                                                  ò
                                                                   g
                                                                                          δ
                                                                                                           g
                                                                                                                                  ò
                                                                                                                                                    В
                                                                                                                                                                        δ
                                                                                                                                                                                           원
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

```
2111
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2691 TTCCCCCTGGACTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT 2750
                                                                                                                                                                                                                                                                                                                                                         2171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2351
                                                   ä
                                                                                                                                                  2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              006
                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                       GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                     1992 GECAGITCALIGAIGGAGAGIGAAGIAAACCIGGACCGIIAICAAACAGCIIIAAGAAA
                                                                                                                                                                                                                                      2052 GIAITAITGITGITTTTTCTGCTGAGGACACATTGCAAGCACACAGAGAAGAATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2292 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2412 ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541 ACTCACATGGTGGTGGTAGTTGATGATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2532 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTACTCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------ACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAG
                                                                                                                                                                                                      GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                          GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                      GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2232 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421 ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2592 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781 AAACTAGAAATGCCATCTTCCTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841 TICCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661 IGGGTTCTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCT
                                                                                                    1 GGCAGTICATIGAIGGAGAGTGAAGTAAACCIGGACCGTTATCAAACAGCTTTAGAAGAA
                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 141;
  Length 5060
Query Match 85.4%; Score 1709; DB 10; Best Local Similarity 93.0%; Pred. No. 0; Matches 1860; Conservative 0; Mismatches 0;
```

```
TYPE: DNA
ORGANISM: Homo sapiens
US-09-845-416-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     상
음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        상 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                  1260
                                                                                                                                                                                                                                                    1320
                                                                                                                                                                                                                                                                           3170
                                                                                                                                                                                                                                                                                                     1380
                                                                                                                                                                                                                                                                                                                                                                                                        1500
                                                                                                                                                                                                                                                                                                                                                                                                                                  3350
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACGICAATGACCTIGCTCGCCAGCTTACCACTTTGGGCAITCAGCTCTCACCGTATAAC 3650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAACAAAAAAGGCCCTACTAT 3830
                                                                                                                                                                                                                                                                                                                                                      ACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT 1680
              AACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                                        crerracaaagacerrregarraacargaacrrcaagregagreaacrreggaaaaagrer
                                                                                                                                                              CTCAACATTAGGTCCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT
                                                                                                                                                                                                 ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG
                                                                                                                                                                                                                                                                                                     GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTG
                                                                                                                                                                                                                                                                                                                    GAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTGAGAATATTCTG
                                                                                                                                                                                                                                                                                                                                                                       GAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caccrccadaaacrcaadccacrrccadaaaarrcccccrcrcaaaagaaccrcadacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCAGCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTAT
                                               AACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTC
                                                                                                CTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCT
                                                                                                                                                CTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCT
                                                                                                                                                                                                                           crecassakerrerssigersecracascreaaaaaarsarraaasccsscasser
                                                                                                                                                                                                                                                    ATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT
CTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Archaccaccaccaccaccaca 3851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3411
                        2811
                                                                         2871
                                                                                                 1081
                                                                                                                        2931
                                                                                                                                                                          2991
                                                                                                                                                                                                    1201
                                                                                                                                                                                                                           3051
                                                                                                                                                                                                                                                    1261
                                                                                                                                                                                                                                                                             3111
                                                                                                                                                                                                                                                                                                                               3171
                                                                                                                                                                                                                                                                                                                                                       1381
                                                                                                                                                                                                                                                                                                                                                                                 3231
                                                                                                                                                                                                                                                                                                                                                                                                                                  3291
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3831
                                               1021
                                                                                                                                                  1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1741
                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                           1441
 961
 ≿
                       á
                                               ≿
                                                                       ŏ
                                                                                                  ≿
                                                                                                                    ĊΩ
                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
```

```
1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1660 TGGGTTCTTTTACAAGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCTT 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAACAACATAAGGTGCTTCAAGAACAACAAGAACAAGAACAAGTCAGGGTCAATTCTCTC 1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     999
US-09-845-416-2

Sequence 2, Application US/09845416

Publication No. US20030171312A1

Publication No. US20030171312A1

GENERAL INFORMATION:

APPLICANT XIAO, XIAO

TITLE OF INVENTION: THEREOF

TITLE OF INVENTION: THEREOF

FILE REFERENCE: DB1142

CURRENT APPLICATION NUMBER: US/09/845,416

CURRENT FILING DATE: 2001-04-30

PRIOR PILIATION NUMBER: 60/200,777

PRIOR PILING DATE: 2000-04-28

NUMBER OF SEQ ID NOS: 36

SSEQ ID NO 2

LENGTH: 4182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGTTCTTTTACAAGACCAGCCTGAC------CTAGCTCCTGGACTGACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1000 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAAGGAAAATGGAGGAAGACCTCTTGGACCTGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1120 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAATGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTCACATGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GCCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72; Indels 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                 83.1%; Score 1662.8;
88.3%; Pred. No. 0;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 88.3
Matches 1929; Conservative
```


Qy 1198 TCTCTGCAGGAACTTCTGGTGTGCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCA	Qy 1258 CCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGGAGGAGGATGTACATAGGGCCTTCAAG 1 Db 3197 CCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGGAGAGGAGAAGGATGTACATAGGGCCTTCAAG 3	Qy 1318 AGGBARTGAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATT 1	Qy 1378 CTGACAGAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCT 1	QY 1438 CCTGAGGAGAGCCCAGAATGTCACTGGGCTTCTACGAAAGCAGGCTGAGGAGGTCAAT 1 Db 3377 CCTGAGGAGAGACCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAAT 3	OY 1498 ACTGAGTGGGAAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATTAGAGACC 1	Qy 1558 CTTGAAGGCTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAA 1	OY 1618 GCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCTCCAA 1	OY 1678 GATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTG 1 D 3617 GATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAAA	QY 1738 AGCCAGGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTAT 1	OY 1798 AACCTCAGCACTCTGGAAGACCTGAACATGGAAGCTTCTGCAGGTGGCCGTCGAG 1	QY 1858 GACCGAGTCAGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTT 1 Db 3797 GACCGAGTCAGGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTT 3	Qy 1918 CTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAA	Oy 1978 TATATCAACCAGGACTCAAACA 2001 	RESULT 10 US-10-149-736-41 ; Sequence 41, Application US/10149736	GENERAL INFORMATION APPLICANT: Chamberlain, Jeffrey S. APPLICANT: Harper, Scott Q.	IIILE O. INVENTION: MILL-LYSITODNIN NUCLEIC ACIGE AND FEDILE SEQUENCES FILE REFERENCE: UM-06968 CURRENT APPLICATION NUMBER: US/10/149,736 CURRENT FILING DATE: 2002-06-106.	PRIOR FILING DATE: 2001-10-04 PRIOR FILING DATE: 2001-10-04 PRIOR FILING DATE: 2000-10-06 NUMBER OF SEQ ID NOS: 96
301 TGGGAATGCCTCAGGGTAGCTAGGAAAACAAAGCAATTTACATAGAGTTTTAATG 360	GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA 420	ACAGGAAAATGGAGGAAGAGCCTCTTGGACCTTGAAGACCTAAAACGCCAAGTA 480 ACAAGGAAAATGGAGGAAGGAAGGACCTGATCTTGAAGACCTAAAAACGCCAAGTA 480 ACAAGGAAAATGGAGGAAGGAGAGACTTGAAGAAAATGAAAAAAAA	CAACAAAAAAGGGGTTCAAAAAAAAAAAAAAAAAAAAAA	ACTCACATGGTGGTGGTGGTTGATGAATCTAGTGGGACATCACGCAACTGCTTTGGAA 	GAACAACTTAAGGTATTGGGACATGGGCAAACATCTGTAGATGGACAGAAGACGG 	rgggttcttttacaagaccagcctgac	709 ATTGGAGCCTCTCCTACTCACACTGTTACTCTGGTGACACAACTGTGGTT 759	ACTAAGGAAACGCATCTC	780	802 TTGATGTTGGAG	GTACCTACTCAAAAACTTGAAAAAAGACTACAACCTCATTGATTACTGCAA 	CAGTICCCCCTGGACCTGGAAAGTITCTTGCCTGGCTTACAGAAGCTGAACACACCCCCCCCCC	CAAGGGAGTAAAA 9 	958 GAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACAGATGTTTAT 1017 	1018 CACAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCA 1077 	1078 GTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAG 1137 	1138 TCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTT 1197

ড় ঈ ড়

2 2 2 2 2 2

```
Sequence 42, Application US/10149736

Sequence 42, Application US/10149736

Publication No. US20030216332A1

GENERAL INFORMATION:

APPLICANT: Chamberlain, Jeffrey S.

APPLICANT: Harper, Scott Q.

TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences

TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences

CURRENT APPLICATION NUMBER: US/10/149,736

CURRENT FILING DATE: 2002-06-17

FRIOR FILING DATE: 2001-10-04

PRIOR FILING DATE: 2001-10-04

PRIOR FILING DATE: 2001-10-06

NUMBER OF SEQ ID NOS: 96

SEQ ID NO 42

LUMBER PATENT NUMBER: 2004-10-06

SEQ ID NO 42

LUMBER PATENT NUMBER: 2004-10-06

MUMBER PATENT NUMBER: 2004-10-06

MUMBER OF SEQ ID NOS: 96

SEQ ID NO 42

LUMBER OF SEQ ID NOS: 96

LUMBER OF SEQ ID NOS: 96
                                  2438 GATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGATCAAGGGATCCTGGCAGCCGTG
                                                                                                        2498 GGCGATCTCCTCATTGACTCTCTCCAGATCACCTCGAGAAGTCAAGGCACTTCGAGA
                                                                                                                                                                       1711 GAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACC
                                                                                                                                                                                                            2558 GAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACC
                                                                                                                                                                                                                                                          1771 ACTITIGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGA
                                                                                                                                                                                                                                                                                                    2618 ACTITIGGGCATICAGCICICACCGTATAACCICAGCACTCTGGAAGACCTGAACACAGA
                                                                                                                                                                                                                                                                                                                                                1831 IGGAAGCTICTGCAGGTGGCCGTCGAGGCCGAGTCAGGCAGCTGCATGAAGCCCACAGG
                                                                                                                                                                                                                                                                                                                                                                       2678 TGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCATGAAGCCCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                   1891 GACTITIGGICCAGCATCTCAGCACTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2738 GACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTCTCCAGGGTCCCTGGGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2992 deaagaaacrearagarracrecaacagrrececeregaceregaaaagrrrerrecere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              873 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3052 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1112 CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCCCCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     993 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1651 GGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2798 gecarcreceaaacaaargeceracrarareaaceacagaercaaaca 2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1951 GCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 15; Length 8689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
59.1%; Score 1182.6;
Best Local Similarity 99.7%; Pred. No. 0;
Matches 1185; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: DNA
; ORGANIEM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic
US-10-149-736-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-149-736-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       933
1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                    ద
                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                       8
                                                                                                                                                             े
                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1530
                                                                                                                                                                                                                                                                                                                                                                                                                 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTG 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1051 AGAICCCTGGAAGGTICCGAIGATGCAGTCCTGTIACAAAGACGTTTGGAIAACAIGAAC 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTG 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1231 AAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAG 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATG 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATG 2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCCGCCTTTGGAAGGACTAGAGAA 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACG 2437
                                                                                                                                                                                                                                                                                                                           1547 GCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCTGGTGACACAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1718 rescriracaeaagcreaaacaacreccaarerccracaeaarecracceraaeaaaa 1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1778 CTCCTAGAAGACTCCAAGGGGTAAAAGAGCTGATGAAACAATGGCAAGACTCCAAGGT 1837
                                                                                                                                                                                                                                                                                                                                                                       810
                                                                                                                                                                                                                                                                                                                                                                                                                                                           870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGATGATGAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                 cergregriaetraceaaacrecearerecaaacragaaarecearerrecrigarerie
                                                                                                                                                                                                                                                                                                                                                                                                                                                             811 GAGGTACCTACTTAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----catagartactgcaacagtrccccctggacctggaaaagtrtcttgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u> agarcecregaaegrrecearearecaerecrerracaaaeaeerrregaraaeareaaee</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1958 TTCAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rereaccagnegaagegrengeaccriteredeagaacriciggrengegracagere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       стстассавдаессавдаестестствавдавдесссавдатетсастсвестт
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTACGAAAGCAGGCTGAGGGCCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGG
                                                                                                                                                                                                                                          9
                                                                                                                                                                                                Length 5462;
                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                       Query Match 64.1%; Score 1283; DB 15; Best Local Similarity 99.3%; Pred. No. 0; Matches 1302; Conservative 0; Mismatches 0;
SOFTWARE: Patentin version 3.1 SEQ ID NO 41 LENGHH: 5462 TYPE: DNA ORGANISM: Artificial Sequence FEATURE:
                                                                                                                               ; OTHER INFORMATION: Synthetic US-10-149-736-41
                                                                                                                                                                                                                                                                                      691
                                                                                                                                                                                                                                                                                                                                                                                                                   1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2318
                                                                                                                                                                                                                                                                                                                                                                         751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dd
```

ö

```
CCTAGAAGACTCCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                               8112 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGAAGCTCACACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u> ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGAAAGCAGGCTGAGGGCTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                              ggaagaaacrcaragarracrgcaacagrrcccccrggaccrggaaaarrrcrrgccrg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACCAGTGGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTACCAGGAGCCCAGAGAGCTGCCTCTGAGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGCTACAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTT
                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                  4; Indels
                                                                                                                                                                                                                                 DB 10;
                                                                                                                                                                                                                               Score 1182.6;
Pred. No. 0;
0; Mismatches
FILE REFERENCE: DE1142
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,410
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOTUWARE: PATENTIN VEY. 2.1
SEQ ID NO
                                                                                                                                                                                                                                 59.1%;
99.7%;
                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                  TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 1185; Conserv
                                                                                                                                                    LENGTH: 11058
                                                                                                                                                                                                   US-09-845-416-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1053 .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1473
                                                                                                                                                                                                                                                                                                                                   8052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8712
                                                                                                                                                                                                                                                                                                                                                                   873
                                                                                                                                                                                                                                                                                                                                                                                                                                   933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  993
                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                吕
                      1112
                                                                                     1172
                                                                                                                                                                                     3411
                                                                                                                                                                                                                     1292
                                                                                                                                                                                                                                                                                      1352
                                                                                                                                                                                                                                                                                                                                                     1412
                                                                                                                                                                                                                                                                                                                                                                                                                     1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATG 4011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITIGGICCAGCAICTCAGCACTITCTTTCCACGICTCCAGGGICCCTGGGAGAGAGC 1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4131
                                                                                                                   3351
                                                                                                                                                                                                                                                                                                            3532 TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAAACT 3591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1473 ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAAACACCCAGATG 1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3832 CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 3951
                                                                                                                     3292 caagiggagigaaciicggaaaaaagicicicaacaiiaggicccaiiiggaagccagiic
                                                                                                                                                    TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCTGAA
                                                                                                                                                                       3352 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                   AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                               3412 AGATGATGAATAAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                      GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                   TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                     CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                       3652 ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGCGCCTCTGAAAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGA
                                                    3232 Arcccregaaegricceargarecagrecrerracaaagacgriregaraacargaacrr
                                                                                     CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                crrregrecaecarcreacecrrrerrrecaegrererereaegecereesagagage
                        ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCTCGCCAAACAGGCCCCTACTATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1833 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4132
                        1053
                                                                                     1113
                                                                                                                                                                                                                                                                                                                                                      1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1953
                                                                                                                                                    1173
                                                                                                                                                                                                                       1233
                                                                                                                                                                                                                                                                                       1293
                                                                                                                                                                                                                                                                                                                                                                                                                     1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                    તુ
                                                                                     ጵ
                                                                                                               ત્
                                                                                                                                                 ጵዳ
                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                             સ
                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                   \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                    સ
                                                                                                                                                                                                                                                                                                                                                                                                                     \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \stackrel{>}{\sim}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ą
                        ጵ
```

8351 1172 8411 1232 8471 1292 8531 1352 8591 1412 8651 1472 8711 1532

TGAGCTGGACCTCAAGCTGCGCCCAAGCTGAGGTAATCAAGGGATCCTGGCAGCCCGTGGG

crescagadaaaaaradardadacccrrsaaadacrccaggaacrrcaagaggccacgga

1533

ò 원 ઠે 셤

8772 1593 8832

Sequence 1, Application US/09845416
Publication No. US20030171312A1
GENERAL INFORMATION:
GENERAL INFORMATION:
A TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE

RESULT 12 JS-09-845-416-1

8111

CTTGCCTG

ö 872

Gaps

11058 ô 8171

932

1472 6405 6465

6525

6585 1712 6645 6705 1832 1952

6885

ઠે 쉽 à g ò d δ g

a ò a

ò

g à g δ 셤 ò

à

```
GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 47, Application US/10149736
Publication No. US20030216332A1
GENERAL INFORMATION:
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Harper, Scott Q.
TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences
FILE REFERENCE: UM-06968
CURRENT APPLICATION NUMBER: US/10/149,736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rrrddddarrcadcraracararaacarcacarcarddaagaacarcagaacaacaacard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITITGGICCAGCAICICAGCACITICITICCACGICIGICCAGGGICCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTTGGTCCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                                               6226 GAACGATGTACATAGGGCCTTCAAGAGGBATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                  TACTCTTGAGACTGTACGAATATTTTCTGACAGGAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                               crescadadadadardadarcaccrisadadacriccassadarcricadadasccaces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cgarcrecrearreaetererecaagareaetregagaaagaeaageeaetregaggaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATTGGGCCTCTGAAAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
5986 ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                     1113 CAAGTGGAGTGAAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                 1173 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA
                                                                                                                                                 6106 igaccagiggaagcgicigcacciiicicigaggaaciiciggigiggiggciacagcigaa
                                                                                                                                                                                         AGATGATGAATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                               TACTCTTGAGACTGTACGAATATTTCTGACAGGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Acgaaagcagecrgaggaggrcaaracrgagrgggaaaaarrgaaccrecacrga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                       5046 CAACTCCAGTCAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCTCGCCAAACAAAGTGCCCTACTATTCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-149-736-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1713
                                                                                                                                                                                                                                                                                                                                                   1353
                                                                                                                                                                                                                                                                                                                                                                                          6286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1953
                                                                                                                                                                                                                                                                                                                                                                                                                               1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                          DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠ
                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                            8 6
                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ፟
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                              8 6 8 6
                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCCCTGGAAGGTTCCGATGAAGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 1112
                                                                                                                                                                                                                 9071
                                                                                                                                                                                                                                                                                           9131
                                                                                                                                                                                                                                                                                                                                                                       cririderccaecarcrcaecacriricriricaecarcrerccaeserccreseaeaeaeae 9191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Harper, Scott Q.
TITLE OF INVENTION! Mini-Dystrophin Nucleic Acids and Peptide Sequences
FILE REPERENCE: UM-06968
CURRENT APPLICATION NUMBER: US/10/149,736
CURRENT FILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: 60/238,848
PRIOR PILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ccracaadacrecaaddagraaraaadagcreargaaacaargccaagaccrecaadgrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  centricitatingacitaticaagaitacetagagaaagataaggaaataaggaaga
                                                                                                  AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC
                                                                                                                                                                            TITGGGCATICAGCICICACCGIAIAACCICAGCACICIGGAAGACCIGAACACACAGAIG
                                                                                                                                                                                                                                                                                           GAAGCTTCTGCAGGTGGCCGTCGAGGCCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                  CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                        GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                        CGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 15; Length 11443;
                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match

59.1%; Score 1182.6;

Best Local Similarity 99.7%; Pred. No. 0;

Matches 1185; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 44, Application US/10149736 Publication No. US20030216332A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; FEATURE:
; OTHER INFORMATION: Synthetic
US-10-149-736-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q ID NO 44
LENGTH: 11443
                                                                                                                                                                                                                                                                                                                                                                                                                1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5866.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1053
                                                                                                                                           8952
                                                                                                                                                                                                                                                                                                                                                                           9132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            993
                                                                 8892
                                                                                                                                                                              1773
                                                                                                                                                                                                                     9012
                                                                                                                                                                                                                                                                                               9072
                                                                                                                                                                                                                                                                                                                                    1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                   9192
                                                                                                      1713
                                                                                                                                                                                                                                                          1833
```

⋩ ă ⋩ $\stackrel{>}{\sim}$ ત્ર ⋩

⋩

⋩ ત્ ⋧ 9 ≿

```
8319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1053 ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 1112
     9040 TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 9099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9340 CTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTCTTCCAGGGTCCCTGGGAGAGAGC 9399
                                                                                                                                                                                     9160 AATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCCATTGACCTTGCTCGCCGGCTTACCAC
                                                                                                                                                                                                                                                           TITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                                                                                                                   TTGGGGATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG
                                                                                                                                                                                                                                                                                                                                                              GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8320 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccragaagacrccaagggagraaagagcrgargaaagagcaagaccrccaaggga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8500 ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                     9100 carciccicalidacicicadadacaccicadaaascicaaggaagaa
                                                                                                                                                                                                                                                                                                                                                                                                            9280 GAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9400 CATCTCGCCAAACAAGAAGTGCCCTACTATATCAACCACGAGACTCAAACA 9448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1182.6; I
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Hearing, Patrick
APPLICANT: Bahou, Wadie
APPLICANT: Bahou, Wadie
APPLICANT: Bandalon, Ditvi
APPLICANT: Gnacenko, Dmitri
TITLE OF INVENTION: Adenoviral Vectors
FILE REFERENCE: STONYB-04970
CURRENT APPLICATION NUMBER: US/09/782,378A
CURRENT FILING DATE: 2001-02-12
PRIOR FILING DATE: 2000-10-02
NUMBER OF SEQ ID NOS: 27
SOFTWARE: Patentin version 3.0
SOFTWARE: Patentin version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       // Sequence 22, Application US/09782378A
// Patent No. US20020102731A1
// GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 99.7%;
Matches 1185; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
CORGANISM: Homo sapiens
US-09-782-378A-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-09-782-378A-22
                                                          1653
                                                                                                                                                           1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8440
                                                                                                                                                                                                                                                           1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1893
                                                                                                                                                                                                                                                                                                              9220
                                                                                                                                                                                                                                                                                                                                                              1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  933
                                                     8
                                                                                                   유
                                                                                                                                                                                           g
                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1533 CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGCCACGGA 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGCTGGACCTCAAGCTGCGCCAAGCTGATCAAGGATCCTGGCAGCCGTGGG 1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8440 AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG 8499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1053 ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8500 ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT 8559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1113 CAAGTGGAGTGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8620 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACACTACAGCTGAA 8679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8680 AGATGATGAATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 8739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8860 CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGGCCCAGAATGTCACTCGGCTTCT 8919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8980 CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 9039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8380 CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA 8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1293 GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8260 GGAAGAAACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3320 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          933 CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1173 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGTGCTACGTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1233 AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8740 GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1353 TACTCTTGAGACTGTACGAATATTTCTGAGGAGCAGCCTTTGGAAGGACTAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8800 TACTCTTGAGACTGTACGAATATTTCTGAGAGGAGCAGCCTTTGGAAGGACTAGAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1413 CTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1473 ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8920 ACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         873 GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                         Length 12057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813 GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                      4; Indels
                                                                                                                                                                                                                                                                                                                                                                                         DB 15;
                                                                                                                                                                                                                                                                                                                                                                                   Score 1182.6;
Pred. No. 0;
0; Mismatches
CURRENT FILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: PCT/US01/31126
PRIOR FILING DATE: 2001-10-04
PRIOR FILING DATE: 2001-10-04
PRIOR FILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
SOFUMARE: Patentin version 3.1
LENGTH: 12057
                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 99.7%;
Matches 1185; Conservative
                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Synthetic JS-10-149-736-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             993
                                                                                                                                                                                                                                                                                        FEATURE:
```

ò	7	CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC 1172
Dp	8560	r)
ò	1173	TGACCAGTGGGAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAA 1232
qq	8620	Φ)
'n	1233	AGAIGAIGAATTAAGCCGGCAGGCACCTAITGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
QQ	8680	œ
à	1293	135
Db	8740	GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG 8799
à	1353	141
qq	8800	œ
à	1413	CTACCAGGAGCCCAGAGAGCTGCCTCCTGAGAGAGAGCCCAGAATGTCACTCGGCTTCT 1472
QQ	8860	CTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCT 8919
λĊ	1473	ACGAAAGCAGGCTGAGGTCAATACTGAGGGAAAAATTGAACCTGCACTCCGCTGA 1532
qq	8920	CGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGA 8
λζ	1533	CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 1592
QQ	8980	CTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGA 9039
27	1593	TGAGCTGGACCTCGAGCTGCGCCAAGCTGATCAAGGGATCCTGGCAGCCCGTGGG 1652
qo	9040	TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGG 9099
ķ	1653	CGATCTCCTCATTGACTCTCCGAGATCACCTCGAGAAAGTCGAGGCACTTCGAGGAGA 1712
QQ	9100	GATUTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGA 9
š	1713	AATIGGGCCTCTGAAAGAAGGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 1772
Db	9160	AATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCAC 9219
à	1773	13
Db	9220	TTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATG 9279
ò	1833	GAAGCTICTGCAGGTGGCCGTCGAGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 1892
Db	9280	GAAGCTICTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGA 9339
λŏ	1893	CITIGGICCAGCAICTCAGCACITICTITCCACGICTGICCAGGGICCCIGGGAGAGAG 1952
Op	9340	CTITEGICCAGCATCICAGCACITICITICCACGTCTGICCAGGGTCCCTGGGAGAGAGAC 9399
λŏ	1953	CATCTCGCCAAAGAAGTGCCCTACTATATCAACGAGACTCAAACA 2001
qq	9400	CATCICGCCAAACAAAGIGCCCIACIAIIIITCAACCACGAGACICAAACA 9448

Search completed: April 5, 2004, 16:33:02 Job time: 498.207 secs

```
RESULT 1
BC036103
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC036103 Homo sapi
AY399453 Homo sapi
BI729851 603349511
AK044536 Mus muscu
                                                                                                                  April 4, 2004, 16:52:43; Search time 3498.53 Seconds (without alignments) 17079.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                        1 ggcagttcattgatggagag......tcaaccacgagactcaaaca 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                                                                                                                                                                                                                                      55026578
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                           27513289 seqs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                         US-09-845-416-6_COPY_1000_3000
2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3870 11 BC036103
5691 29 AY399453
834 12 BI729851
3056 11 AK044536
                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                 IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1: - em estba:*
2: em_esthum:*
3: em_esthum:*
5: em_estru:*
6: em_estro:*
6: em_estro:*
7: em_estro:*
10: gb_estro:*
11: gb_htc:*
11: gb_estro:*
12: gb_estro:*
13: gb_estro:*
14: gb_estro:*
15: gb_estro:*
16: em_gss_hum:*
17: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
18: em_gss_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST: *
                                                                                                                                                                                                   Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      678.4
678.4
591.8
547.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Result
No.
```

AY399455 Mus muscu BI730168 603349711	550 DKFZp762L	8986	0319 MRA-0070	9454 Pan trog	8464 pgm2n.pk	7816 is21c01.	3510 60354029	17284	18546 Homo sap	1426 Mus musc	8548 Mus mus	7022 Homo sa	9978 Shultzo	86095 Homo	1106	702	438	702	020	999	385	244	896	459	361	854	165	200	9655	0081	6/6/	666	376	9203	3910	102	3852	808	133		
29 AY399455	AL121550	4 CB22898	4 CB85031	9 AY39945	2 BM48846	4 CB17781	3 BU31351	4 CB54728	9 AY40854	1 AK08142	9 AY40854	9 AY40702	4 CF10997	1 BC03609	1 BC01106	9 AY40702	1 AK03438	9 AY40702	2 BI25059	4 CD65689	2 BI55382	2 BG21244	4 CB51896	4 CB52459	0 BF96361	9 AY40854	3 BU30165	2 BJ0750	3 BU45655	4 CF74800	0 AW46797	4 CD54999	AL85537	AL602076	2 BI28910	3 BU20102	2 BI98852	9 CE2280	4 CB81130	ALIG	
.4 5697	67.5 67.5	.6 728	.0 1047	.3 5676	.2 663	.4 595	.4 644	.2 402	.5 2874	.5 3753	.1 2874	.9 9915	.3 1122	.3 3051	.1 2334	.1 9691	.9 1541	9606 8.	.6 772	.7 826	.6 835	.5 784	.5 763	.5 778	.3 250	.1 2874	.8 681	969 0.	.0 697	.2 812	.1 645	.0 466	.6 630	.4 502	.4 646	.3 851	.2 600	.9 569	.9 405		
547.4 27	86.6	71.6	59.4 2	446 2	.2	409 2	89 1	24.6 1	10.8 1	.8	01.2 1	78.2 1	65.4 1	65.4 1	61.2 1	61.2 1	57.8 1	55.4 1	52.4 1	33.6 1	233 1	30.8 1	.2	29.2	226 1	22.2	16.6 1	œ.	99.2	84.4	82.4	79.6	72.2	. 9.79	67.2	65.4	64.6	58.2	58		
மை	0 1~	- 00	0	10	11	0 12	13	c 14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	32	m	c 37	38	33	40	c 41	42	43	C 44	4		

	COOC YOU OF DEET STATE STATE OF DEET
Z	S8/0 bp makes Homo sapiens dystrophin (muscular dystrophy, Duchenne and Becker
	types), mRNA (cDNA clone IMAGE:5274415), with apparent retained intron.
7	*BC036103
	BCCCCCC. G. GI. NUR. HUHO
	Homo sapiens (human)
ΣS	Homo sapiens
	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
œ	1 (bases 1 to 3870)
ξŊ	Strausberg, R. L., Feingold, E. A., Grouse, L. H., Derge, J. G.,
	Klausner, R.D., Collins, F.S., Wagner, L., Shenmen, C.M., Schuler, G.D.,
	Altschul, S.F., Zeeberg, B., Buetow, K.H., Schaefer, C.F., Bhat, N.K.,
	Hopkins, R.F., Jordan, H., Moore, T., Max, S.I., Wang, J., Hsieh, F.,
	Diatchenko, L., Marusina, K., Farmer, A.A., Rubin, G.M., Hong, L.,
	Stapleton, M., Soares, M.B., Bonaldo, M.F., Casavant, T.L.,
	Scheetz, T.E., Brownstein, M.J., Usdin, T.B., Toshiyuki, S.,
	Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J.,
	Abramson, R.D., Mullahy, S.J., Bosak, S.A., McEwan, P.J.,
	McKernan, K.J., Malek, J.A., Gunaratne, P.H., Richards, S.,
	Worley, K.C., Hale, S., Garcia, A.M., Gay, L.J., Hulyk, S.W.,
	Villalon, D.K., Muzny, D.M., Sodergren, E.J., Lu, X., Gibbs, R.A.,
	Fahey, J., Helton, E., Ketteman, M., Madan, A., Rodrigues, S.,

```
1562
                                                                                                                                                                                                                                                                                                                                                                                                               1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
0
                                                                    1443 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATG 1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AY399453 5691 bp DNA linear GSS 12-DEC-2003 Homo sapiens HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                               1563 ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA 1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1683 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA 1742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1743 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGC 1802
                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                               420
                    TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases I to 5891)
1 (ark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Aderniara, S., Wango, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, White, T.J., Sninsky, J.J., Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Glark, A.G., Glanowski, S., Nielson, R., Lu, F., Murphy, B., Tananbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Perriera, S., Mang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Direct Submission Cargill, M. Direct Submission Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.
                                                                                                                                                                           GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                               CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                       CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACAACTTAAGGTATTGGGAGATGGGCAAACATCTGTAGATGGACAGAAGACGG
                                                                                                                                                                                                                                             421 ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                  361 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 29; Length 5691;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  recentritricale de contrata de la 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGGTTCTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGAC 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33.9%; Score 678.4; DB 29;
llarity 97.7%; Pred. No. 2.9e-142;
Conservative 0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /locus_tag="HCM0229"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genomic survey sequence. AY399453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AY399453.1 GI:39755442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .>5691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 688; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                  1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                             1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1803
                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
AY399453
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                              a
                                                                                                                                     ð
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/link at: http://image.llnl.gov series: IRAK Plate: 48 Row: f Column: 7 This clone was selected for full length sequencing because it passed the following selection criteria: Similarity but not identity to protein This clone has the following problem: retained intron. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: cgapbs r@mail.nih.gov

Email: cgapbs r@mail.nih.gov

Issue Procurement: Miklos Palkovits, M.D., Ph.D.

CDNA Library Preparation (RIKEN)

Toshiyuki and Piero Carninci (RIKEN)

Toshiyuki and Piero Carninci (RIKEN)

Toshiyuki and Piero Carninci (RIKEN)

DNA Sequencing by: Sequencing Group at the Stanford Human Genome

Center, Stanford University School of Medicine, Stanford, CA 94305

Mubb site: http://www-shgc.stanford.edu

Contact: (Dickson, Mark) mcdgapaxil.stanford.edu

Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1143 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1203 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAAT 1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1263 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1323 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1383 AAATTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA 1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 GTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGGAGGAGAGATTTCTAAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
Sanchez, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y., Bouffard, G.G., BlakeBley, R.W., Touchman, J.W., Green, E.D., Dickson, M.C., Rodriguez, A.C., Grimwood, J., Schmutz, J., Myers, R.M., Butterfield, Y.S., Krzywinski, M.I., Skalska, U., Snailus, D.E., Schnerch, A., Schein, J.E., Jones, S.J. and Marra, M.A. Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences
Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (31-ULL-2002) National Institutes of Health, Mammalian
Submitted (31-ULL-2002) Cancer Genomics Office, National Cancer
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 11; Length 3870;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/mol_type="mRNA"
/db_xref="taxon:9606"
/clone="IMAGE:5274415"
/clone="INPE="Brain, hippocampus"
/clone lib="NH MGC 95"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 678.4; DB 11
Pred. No. 2.7e-142;
0; Mismatches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'note="Vector: pBluescript"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NIH-MGC Project URL: hi
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    33.9%;
                                                                                                                                                                                                                                                                             (bases 1 to 3870) trausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 97.7<sup>3</sup>
Matches 688; Conservative
                                                                                                                                                                                                                                                     2477932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                          JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
```

g

d

ò

g

ò

g

ò

m

ď ⋩ ď ≿ ä ⋩ ä ⋩ ă ⋩

≿

```
1. 034
// Corganism="Mus musculus"
// Corganism="Mus musculus"
// AD_Tref="taxxn:10090"
// AD_Tref="taxxn:10090"
// AD_Tref="Taxxn:10090"
// Iab_Host="DH10B (phage-resistant)"
// Iab_Host="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (phage-resistant)"
// AD_Tref="DH10B (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1233 AGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCA 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C-TACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGCCCCAGAATGTCACTCGGCTTC 1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             374 caagreeagreaacricagaaaagrerereacarraggreecarriggaagcaagric 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGTGGCTACAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATGATATACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135 GATTACGGAAGCAGAAACAACTGCCAATGTCCTACAGGACGCTTCCCGTAAGGAGAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTAGAAGACTCC-AGGGAGTCAGAGGCTGATGAAACCATGGCAAGATCTCCCAAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTC-CGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          314 Arcccriccaaccriccardaaccaccccricriacaaccrirriccaraacardaarrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACGAAAGCAGGCTGAAGGTCAACGCTGAATGGGACCAATTGAACCTGCGCTCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   494 AgArgaAgradaccorchdochccarcoordonarriccchochgaacha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  criaccaggagcccagagaacrgccrccrgaagaaagagcrcagaargrcacrcggcrcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ٠.
س
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 834;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
      at:
found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov plate: LLMN1908 row: e column: 03 High quality sequence stop: 796. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29.6%; Score 591.8; DB-12; 90.5%; Pred. No. 7.1e-123; ive 0; Mismatches 67; ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACTGGCAGAGAAA 1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 665;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              813 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   603349511F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5357162 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       985 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAGACGC 1044
                                                                                                                                                         120
                                                                                                                                                                                                                                                                            121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 180
                                                                                                                                                                                                                                                                                                                                     564
                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    925 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCGAACTGCTGCTTTGGAA 984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                      445 GTATTATCGTGGCTTCTTTCTGCTGAGACACATTGCAAGCACAAGGAGAGATTTCTAAT 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                        565 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA 804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       805 ACAAGGAAAATGGAAGAAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA 864
                                                                                            385 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACGGTTATCAAACAGCTTTAGAAGAA 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (house mouse)
Mus musculus
Mus musculus
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Musmalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 834)
11 (bases 1 to 834)
Nath-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                      9
                                                                                                                                                                                                                                                                                                                                  GATGTGGAAGTGGTGAAGACCAGTTTCATACTCATGAGGGGTACATGATGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           625 AAATTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATTCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 caacaacaraagergcrrcaagaagarcragaacaagaacaagrcagggrcaarrcrcrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Robert Strausberg, Ph.D.
Email: Gapbert Strausberg, Ph.D.
Tissue Procurement: The Cepko Laboratory
CDN Library Preparation: Life Technologies, Inc.
CDN Library Arrayed by: The I.M.A.G.B. Consortium (LINL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                      GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                  GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1045 recerrentracaacarecriereaaareceaeceretrae 1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661 TGGGTTCTTTTACAAGACCAGCCTGACCTAGCTCCTGGACTGAC 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BI729851
BI729851.1 GI:15706864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        745
                                                                                                                                                                                                                                                                                                                                        505
                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3
```

1052

313

194 992 253

134

≈ ત્ ⋩ ă ည ⋩ ð ⋩ ą ⋧ Ą

⋩

1112

1172

1352

613

493

1412

673

RESULT

g

₹

```
/organises...
/mol_type="mRNA"
/mol_type="mRNA"
/ab_xref="RANTOM_DB:A930019F21"
/db_xref="MANTOM_DB:A930019F21"
/db_xref="MANTOM_DB:A930019F21"
/db_xref="MANTOM_DB:A930019F21"
/clone="A930019F21"
/clone="Lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/clone="lype="retina"
/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1344 Tedebarereredegraecraecaregababacabacrabarracacabagrecraare 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1524 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAGGAGGAGGAGGTCAGGGTCAACTCGGTC 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1044 GACAGTICATIGATGGAGGACGGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAA 1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1104 GTACTTTCATGGCTTCTTTCTGCGAGGATACATTGCGAGCACAAGGAGAAGTTTCAAAT 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1224 TCTCATCAAGGACTTGTTGGTAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGG 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1284 AAATTATCAGAAGATGAAGAAGCTGAAGTGCAAGAACAAATGAATCTCCTAAATTCAAGA 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1464 ACTAAGAAAATGGAGGAAGAGCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTA 1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 GCCCATCAGGCCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361 GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAAAGAAGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA 600
Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216, CDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Rike Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                                                                                                                                                                                                                                       prepare mouse tissues.

Retina RNA was provided by Dr. Stefano Gustincich (Department of Neurobiology, Harvard Medical School, 220 Longwood Ave., Boston, 02115, USA) whose assistance is gratefully acknowledged. Please visit our web site for further details.

URL:http://gancome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1404 GATCTCCAGAATCAGAAATTAAAGAACTAGATGACTGCTTAACAAAAACTGAAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATTATCGTGGCTTCTTTCTGCTGAGGACACACATGCAAGCACAAGGAGATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1164 GATGTTGAAGAAGTGAAAGAACAGTTTCATGCTCATGAGGGATTCATGATGTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGGAATGCCTCAGGGTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 ACAAGGAAAATGGAAGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3056;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27.4%; Score 547.4; DB 11;
88.0%; Pred. No. 1e-112;
Micmatches 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .3056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs

I wature 420, 563-573 (2002)

E (bases 1 to 3056)

S Adachi, J., Alzawa, X., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayatsu, N., Hiramoto, K., Hiraoka, T., Hirozane, T., Hott, F., Imotani, K., Ishii, Y., Itoh, M., Kagawa, T., Kauthara, C., Matsuyama, T., Kondo, S., Konno, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Ohach, Ohacaki, Y., Saito, R., Saitoh, H., Sakai, K., Sakaito, R., Saitoh, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sogbe, Y., Taqami, M., Tagawa, A., Takahshi, F., Takaku-Akahira, S., Muranatsu, M. and Hayashizaki, Y., Tomaru, A., Toya, T., Yasunishi, A., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lich, M., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M., Sumi,N., Ishi,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Pujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Chara,E., Watahiki,M., Yoneda,Y., Ishkawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A., and Hayashizaki,Y. RIKEN integrated sequence analysis (RISA) system-384-format Genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                               mRNA linear HTC 20-SEP-2003
RIKEN full-length enriched library,
                                                                                                                                                                                                                                   AKO44536

Mus musculus adult retina cDNA, RIKEN full-length enriched library, clone:A930019F21 product:dystrophin, muscular dystrophy, full
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, P.T.K. Genomic Sciences Center (GSC), RIKEN Yokobama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata; Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The RIKEN Genome Exploration Research Group Phase II Team and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FANTOM Consortium.
Functional annotation of a full-length mouse cDNA collection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Carninci,P. and Hayashizaki,Y.
High-efficiency full-length cDNA cloning
Weth. Enzymol. 303, 19-44 (1999)
99279253
                                                                                                                                                                                                                                                                                                                                                                                                                    AK044536.1 GI:26090404
HTC, CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nature 409, 685-690 (2001)
                                                   808
       insert sequence.
AK044536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11076861
                                                   794
                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                    RESULT 4
AK044536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
```

TITLE

TITLE

TITLE

ò

180

120

1463

540

ઠે

540 930

```
SET.

Mus musculus (house mouse)

IISM Mus musculus (house mouse)

Mus musculus metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Mus.

NCE | (bases 1 to 750)

IORA (http://mgc.nci.nih.gov/.

JR National Institutes of Health, Mammalian Gene Collection (MGC)

ANAL Unpublished (1999)

NT Conteat: Robert Strausberg, Ph.D.

Email: Gapbs-r@mail.nih.gov

Tissue Procurement: The Cepko Laboratory

Conteat: Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

http://inage.llnl.gov

Plate: LLAM11908 row: f column: 04

High quality sequence stop: 747.

TURES | Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BI730168 750 bp mRNA linear EST 20-SEP-2001
603349711F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5357187 5',
                                                                                                                                                                                    751 GATCTCCAGAATCAGAATTAAAAGAACTAGATGACTGGTTAACAAAAACTGAAGAGAGA 810
                                                                                                                                                                                                                                  421 ACAAGGAAAATGGAGGAAGACCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTA 480
                                                                                                                                                                                                                                                              ACTAAGAAATGGAGGAAAGAGCCCTTTGGACCTGATCTTGAAGATGTAAAATGCCAAGTA 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 931 ACTCACATGGTAGTAGTGGTTGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAA 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601 GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC 660
                                              301 TGGGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATG 360
  631 AAATTATCAGAAGATGAAGCTGAAGTGCAAGAACAAATGAATCTCCTAAATTCAAGA 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="retrina"
/lab.host="Dation (phage-resistant)"
/clone_lib="NIH MGC_94"
/noce="Corgan eye; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally; oligo-dT primed.
Average insert size_3: 3 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                           481 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTC
                                                                                                                                                                                                                                                                                                                                                                        871 CAACAACATAAGGTGCTTCAAGAAGATCTAGAACAGGAGCAGGTCAGGGTCAACTCGCTC
                                                                                                                                          GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                       541 ACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="mRNA"
/db_xref="taxon:10090"
/clone="IMAGE:5357187"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1051 recarrerrracaaca 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661 TGGGTTCTTTTACAAGA 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BI730168.1 GI:15707181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA sequence.
BI730168
                                                                                                                                          361
                                                                                                                                                                                                                                                                                 811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
BI730168
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                ઠે
                                                                                 셤
                                                                                                                        8
                                                                                                                                                                          g
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                          AISYY455
Mus musculus HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence,
avaoare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                           1644 GAACAACTTAAGGTACTGGGAGATCGATGGGCAAATATCTGCAGATGGACTGAAGACCGC 1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5)1 TCTCATCAAGGACTTGTTGGTAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGG 630
                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (house mouse)
Mus musculus
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 5697)
Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,
Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,
Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J.,
Adams, M.D. and Cargill, M.
Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualifiers
1584 ACTCACATGGTAGTAGTGGTTGATGAATCCAGCGGTGATCATGCAACAGCTGCTTTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Murphy, B., Ferriera, S., Hang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   391 Gacagricarridargaagacggaagraaarcriggaragriaccaaacrigcriragaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTACTITICATGGCTTCTTCTGCCGAGGATACATTGCGAGCACAAGGAGGAGATTTCAAAT
                                              GAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27.4%; Score 547.4; DB 29; Length 5697;
88.0%; Pred. No. 1.2e-112;
tive 0; Mismatches 81; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .5697
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="genomic DNA"
/db_xref="taxon:10090"
<1. ...>5697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /locus_tag="HCM0229"
                                                                                                                                                                                    1704 recarrerrracaaca 1720
                                                                                                                                          677
                                                                                                                                                                                                                                                                                                                                                                                                AY399455.1 GI:39755444
                                                                                                                                     TGGGTTCTTTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
Matches 596; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4671302
                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         511
                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                                                                                                                                                                                                                         RESULT 5
AY399455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                            ò
                                                                                           셤
                                                                                                                                                                                    셤
```

ઠે 셤 ò a 셤 à 셤 ò

ઠે

```
FEATURES
                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                   \dot{\delta}
                                                                                                                                                                                                                                                                                                                        1156
                                                                                                                                                                                                                                                                                                                                                                           1216
                                                                                                                                                                                                                                                                                                                                                                                                                               1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTG 1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTT 1096
                             9
                                                                                                                                                                                                                AGACCTCCAAGGTGAAA-TTGAAGCTCACAGATGTTTATCACAACCTGGATGAAACA 1036
                                                                                                                                                                                                                                                                                              368
                                                                                                                                                                                                                                                                                                                                                 428
                                                                                                                                                                                                                                                                                                                                                                                                    488
                                                                                                                                                                                                                                                                                                                                                                                                                                                       548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     728
                                                     863
                                                                               128
                                                                                                          920
                                                                                                                                   188
                                                                                                                                                             977
                                                                                                                                                                                                                                    ATTIGGAAGCCAGITCIGACCAGIGGAAGCGICIGCACCITICICIGCAGGAACTICIGG
                                                                                                                                                                                                                                                                                                                                                                                          ATTTGGAAGCAAGTTCTGACCAGTGGAAGCGTTTGCATCTTTCTCTTCAGGAACTTCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            549 cadcagricadaagcacdaardararacaraggccricaagagggaarrgaaaacraaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                609 GAACCIGIAAICAIGAGIACICIGGAGACIGIGAGAAIAITITCIGACAGAGCAGCCITIG
                                                                                                          864 ICTIGCCIGG-CITACAGAAGCIGAAAC--AACIGCCAAIGICCIACAGGAIGCIACCCG
                                                                                                                                  129 reirrecrissarriracssaascasaakassassetiseearisreeraksaasseerrees
                                                                                                                                                                -TAAGGAAAGGCTCCTAGAAGACTCCAAGGG--AGTAAAAGAGCTGATGAAACAATGGCA
                                                                                                                                                                                                                                                                                              309 GCCAAAAATCCTGAGATCCCTGGAAGGTTCGGATGAAGCACCCCCTGTTACAAAGACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                               TGTGGCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         rrrederracadergaaagargaacreaaccercaagcaccearcegregrearrec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCAGTTCAGAAGCA-GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAA
                                                                                                                                                                                                                                                                                                                        TGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCC
                                                                                                                                                                                                                                                                                                                                                regaraacardaarrircaagregagreaacrircagaaaaagrercreaacarraggreec
                                                     GATGTTGGAGGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTT
                                                                               <u>ecrectricegacagaaacricaragarracrecagagarrecereregagagagarr</u>
                             Gapa
                            8
  DB 12; Length 750
                            Indels
Score. 491.4; DB 12;
Pred. No. 3.4e-100;
0; Mismatches 71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGICACTCGGCTTCTACGA 1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AArGreacreacrectacea 749
 Query Match
Best Local Similarity 88.4%;
Matches 602; Conservative
                                                                                                                                                                                                                                           249
                                                                                                                                                                                                                                                                     1037
                                                                                                                                                                                                                                                                                                                         1097
                                                                                                                                                                                                                                                                                                                                                 369
                                                                                                                                                                                                                                                                                                                                                                            1157
                                                                                                                                                                                                                                                                                                                                                                                                                               1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                          489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1456
                                                                                                                                                                                                                   978
                                                                                                                                                                                                                                                                                                                                                                                                      429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        729
                                                        804
                                                                                  69
                                                        ઠ
                                                                                d
                                                                                                          ò
                                                                                                                                   임
                                                                                                                                                                                       셤
                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                ò
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                         à
```

```
AATGICACICGCTICTACGAAAGCAGGCT 579
                                                                                                                                                                                                                                      CB228986.1 GI:28280564
BST.
Macaca mulatta (rhesus monkey)
                                                                    1457
                                                                                                                                             RESULT 8
CB228986
LOCUS
DEFINITION
                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
         ò
                                   g
                                                                    ò
                                                                                                 원
579 bp mRNA linear EST 04-SEP-2003
DKFZp762L078 r1 762 (synonym: hmel2) Homo sapiens cDNA clone
AL121550
                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia! Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 579)
Ottenwaelder,B., Obermaier,B., Mewes,H.W., Gassenhuber,J. and
                                                                                                                                                                                        EST (Ottenwaelder, et al.)
Unpublished (1999)
Contact: MIPS
MIPS
                                                                                   AL121550.1 GI:5927551
                                                                                                                  sapiens (human)
                                                                                                                  Homo sapiens
Homo sapiens
```

VERSION KEYWORDS SOURCE ORGANISM

ACCESSION

REFERENCE AUTHORS TITLE JOURNAL COMMENT

LOCUS DEFINITION

RESULT 7 AL121550

```
CB228986 728 bp mRNA linear EST 10-FEB-2003 AGENCOURT 11499247 NICHD Rh_Ov1 Macaca mulatta cDNA clone IMAGE:6884820 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1037 GCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTT 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1157 ATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGG 1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13.7 AACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGG 13.96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ingolstaedter Landstr.1, D-85764 Neuherberg, Germany
This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DKPZ); Banail s.wiemannaGkfz-heidelberg.de;
sequenced by MediGenomix (Martinsried/Germany) within the cDNA
sequenced by MediGenomix (Martinsried/Germany) within the cDNA
sequenced by MediGenomix is available at the RZPD in Berlin.
This clone (DKRZp762L078) is available at the RZPD in Berlin.
Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059
Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    191 IGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGCTCC 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      431 AACCIGIAAICAIGAGIACICIIGAGACIGIACGAAIAIIICIGACAGAGCAGCCITIGG 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71 AGGACCTCCAAGGTGAAATTGAAGCTCACAGATGTTTATCACAACCTGGATGAAAACA 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251 ATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGG 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rerescracacercaaadarcarcaarraaceccocaceacerarresacceacerre 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131 GCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           // Organism="Homo sapiens"
/mol_type="mRNA"
/mol_type="mRNA"
/mol_type="mRNA"
/clone="mrreype="melanoma (MeWo cell line)"
/tissue_type="melanoma (MeWo cell line)"
/dev stage="adult"
/lab_not="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="bhot="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 9; Length 579;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 486.6; DB 9
Pred, No. 3.9e-99;
0; Mismatches 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGICACTCGGCTTCTACGAAAGCAGGCT 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
24.3%;
Best Local Similarity 97.2%;
Matches 495; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
```

```
CB850319 1047 bp mRNA linear BST 01-SEP-2003 MRA-0070 MOUSE ADULT RETINA Mus musculus cDNA 5', mRNA sequence. CB850319
                                                                                                                                                                                                                                                                                                                                                  Bukaryota; Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus. I (bases 1 to 1047)
Yu,d., Farjo,R., MacNee,S.P., Baehr,W., Stambolian,D.E. and Swaroop,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        386 AACAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAATTAAAAGAACTAG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   446 ATGACTGGTTAACAAAAACTGAAGAGAGAACTAANAAAATGGAGGAAGAGCCCTTTGGAC 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         273 AGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAG-CTAGCATGGAAA 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    332 AACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAATCAGAAACTGAAAGAGTTGA 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          452 CTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGC-TTCAAGAAGATCTA 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           266 GTTAGGAAGTCAACTAGTTGGAAAAAGGGAAATTATCAGAAGATGAAGAAGAGAGCTGAAGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Annotation and analysis of 10,000 expressed sequence tags from developing mouse eye and adult retina Genome Biol. 4 (10), R65 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGATAGTTACCAAACTGCTTTANAAGAAGTACTTTCATGGCTTCTTCTGCCGAGGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93 ATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146 ATTGCGAGCACAAAGGAGAGTTTCAAATGATGTTGAAGAAGAAGAAGAACAGTTTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       206 rcangagggarrcargargarcrgacarcrcarcaaggacrrgrrggraangrrcraca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 213 ATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          326 AGAACAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTANCCTAGCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tch . 23.0%; Score 459.4; DB 14; Length 1047; al Similarity 85.8%; Pred. No. 6.1e-93; 552; Conservative 0; Mismatches 87; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Swaroop, A.
Department of Ophthalmology and Visual Sciences
Kellogg Eye Center, University of Michigan
540 KEC, 1000 Wall St., Ann Arbor, MI 48105, USA
Tel: 734 615 2246
Fax: 734 647 0228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. 1047
Arganism=Mus musculus"
/mol type="maxna" /db xref="taxon:10090"
/fisuse type="retina" /clone lib="Wouse ADULT RETINA"
/note="Vector: psPORT1"
481 AGACATCCTTCTCAAATGGCAACGTCTTAC 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: swaroop@umich.edu.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                       Mus musculus (house mouse)
                                                                                                                                                                                                                                                CB850319.1 GI:34380806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14519200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local
Matches 55
                                                                                                                                                                                         DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
PUBMED
                                                                                                              RESULT 9
CB850319
                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                    Email: cgapbs r@mail.nih.gov

Tissue Procurement: Dr. Bliot Spindel

CDN Library Preparation: CLONTECH

CDNA Library Preparation: CLONTECH

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Agencourt Bioscience Corporation

Clone distribution: NCI-CGAP clone distribution information can be

found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov

Plate: LLCM3135 row: e column: 11

High quality sequence stop: 583.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="Ovary"
/lab host="DH10B (phage-resistant)"
/clone llb="NICHD Rh_Ov1"
/none="Organ covary; Vector: pDNR-LIB; Site_1: Sfi I;
Site_2: Sfi I; Cloned unidirectionally. Primer: Oligo dT.
Average insert size 1.0-4.0 kb. Tissue pooled from
pre-pubertal, post pubertal sn menopausal monkeys.
Constructed by Clontech. Note: this is a NICHD Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       195 GGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGA 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 GGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181 GAAACTGAAAGAGTTGAATGACTGGCTGACAAAAACAGAAAAGAACAAAGGAAAATGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361 GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAGGCAACTTAAGGT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255 TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAAGAAAATGGA 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAAGGT 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTGGGAGATCGATGGCCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACA 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGGGAGATCGATGGGCAAACATCTGCAGATGGACAGAACGCCGCTGGGTTCTTTTACA 480
                          Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae; Cercopithecinae; Macaca.

(bases 1 to 728)

NCI (Cases 1 to 7.7 /www.ncbi.nlm.nih.gov/ncicgap.

NCI (CASE http://www.ncbi.nlm.nih.gov/ncicgap.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTTGGTAATATTCTACAATTGGGAAGTCAGCTGATTGGAACAGGGAAATTATCAGAAGA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 GARAGGACCTTGGACCTGATCTTGRAGACCTRARACGCCAAGTACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTAGTTGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 23.6%; Score 471.6; DB 14; Length 728; Best Local Similarity 95.3%; Pred. No. 9.9e-96; Matches 486; Conservative 0; Mismatches 24; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       675 AGACCAGCCTGACCTAGCTCCTGGACTGAC 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Macaca mulatta"
/mol_type="mRNA"
/db_xref="taxon:9544"
                                                                                                                                                                                               Tumor Gene Index
Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'clone="IMAGE:6884820"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
     ORGANISM
                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'EATURES
```

ŏ ≿ মূ ≿ ठ ă

ŏ

≿ ĕ

145

265

325

b 709 NNITIACAIAGAGITITIAAIGGAICTCCAGAAICAGAAACIGAAAGAGTIGAAIGAAIGAAGA 768 2y 400 CIAACAAAAACAGAAAAAAAAAAAAAGGAAAAIGGAAGAAGAGAAGAGCTCTIGGACCTGAICTI 459	769	2y 460 gaagacctaaaacgccaagtacaacaacataaggtgcttcaagaagatctagaacaagaa 519 	2y 520 CAAGTCAGGGTCAATTCTCACTCACATGGTGGTGGTGGTGATGAATCTAGTGGAGAT 579	2y 580 CACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATC 639		700 CTGAC	000	BM488464 LOCUS BM488464 LOCUS BM488464 DEFINITION pgm21.pk007,117 Normalized Chicken Breast Muscle, Leg Muscle, and	Epiphyseal grown Plate chwa library (pgm.n) callus gallus chwa clone pgm2n.pk007.ll7 5' similar to sp Pl1533 DMD_CHICK Dystrophin pir S02041 dystrophin, muscle - chicken emb CAA31746.1 (X13369) dystrophin (AA 1 - 3660) [Gallus gallus], mRNA sequence.	-	SOURCE Gallus gallus (chicken) ORGANISM Gallus gallus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	Archosauria; Aves; Neognathae; Galliformes; Phasiani Phasianinae; Gallus. 1 (bases 1 to 663)	AUTHORS Cogburn, L.A. and Monsonego-Ornan, E. TITLE ESTS from Normalized Chicken Breast Muscle, Leg Muscle, and Epiphyseal Growth Plate cDNA library, USDA/IFAFS Animal Genome	Project Unpublished (2002) COMMENT Contact: Larry A. Cogburn University of Delaware	nd Hall, Newark, DE 02-831-1335 02-831-2822	Email: cogburn@udel.edu, www.chickest.udel.edu. FEATURES Location/Qualifiers SOURCE 1663	ganism="Ge 1_type="mI rain="Comm		/conce_pgwwn.prod.rr./ /sex="Male and Female" /tissue_male="Breast muscle, leg muscle and epiphyseal growth Dlate"	<pre>/dev_stage="Breast,leg:Embryo(d19);post-hatch(1d,1,3,5,7,9 /11 weeks);growth plate(1d,7d,14d post-hatch)" /1sh hone-"F contained</pre>	/clone libe Normalized Chicken Breast Muscle, Leg Muscle, and Epiphyseal Growth Plate cDNA library (pgm2n)" /note="Vector: pCMVSPORT6; Library made from equivalent
4 & 		강 A 	λο q _α	8 & 	<i>장</i> 쉽	<i>à t</i>	i 6		-	A V		RE		 		<u>명</u>					·
506 CTGATCTTGAAGATCTAAAATGCCAAGTACAACATAAGGTGCTTTCAAGAAGATCTA 565 511 GAACAAGAACAAGTCAAGTGAATTCTCTGACTGAGGGGGGGG	see gaacagagaagatcaggatcaacacacacatcacatagaaagaa	571 AGTGGAGATCACGCAACTGCTTTGGAAGAACAAC-TTAAGGTATTGGGAGATCGATG 629 	630 GGCAAACATCTG-TAGATGGACAGAAGACCGCTGGGTTCTTT 671 		AY399454 Pan troglody genomic sur/ AY399454			S Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriara, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J.,			Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sn. Adams, M.D. and Cargill, M.	Direct Submission Submitted (16-NOV-2003) Celera Genomics, 45 West Gude D Rockville, MD 20850, USA	NT This sequence was made by sequencing genomic exons and ordering them based on alignment. KES Location/Qualifiers	1: /org /mol /db		22.3%; Score 446; DB 29; Length 5676 Similarity 84.0%; Pred. No. 9.4e-90;	160	529 GGGTACATGATGATNNNNNAGCCCATCAGGGCCGGGTTGGTATANNNNNNNNNN	220 AGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAAACTGAAGTACAAGAGCAG 279 	ATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGCTAGC	649 ATGAATCTNNNNNATTCAAGATGGGANNNNNNNNNNNNNN
qa Xo	QQ	Qy Dp	රු අ	RESULT 10 AY399454	LOCUS DEFINITION ACCESSION	VERSION KEYWORDS SOURCE	NEGEGE G	AUTHORS	TITLE	PUBMED REFERENCE AUTHORS		TITLE JOURNAL	COMMENT	ã a	gene	Query Match Best Local	Matches Qy	d d	95 Dp	δ	да <i>Х</i> у

ORIGIN

ઠ 셤 ò d ò

```
/organism="Tomono Saplemb"
//mol_type="mRNA"
/db_xref="taxon:9606"
/clohe="Intaxon:9606"
/clohe="Intaxon:9606"
/lab_host="DH10B"
/lab_host="DH10B"
/lab_host="DH10B"
/clohe lib="HR85 islet"
/clohe lib="HR85 islet"
/note="Organ: Pancreas; Vector: pBluescript SK(-); Site_l:
/nots site_as arose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average insert size -lkb. Size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose gel. Average size-selected on agarose size-selected on agarose size-selected on agarose 
Lemishka,I., Scearce,M., Brestelli,J., Gradwohl,G., Clifton,S., Hillier,L., Marra,M., Pape,D., Wylie,T., Martin,J., Blistain,A., Schmitt,A., Theising,B., Ritter,E., Ronko,I., Bennett,J., Bistain,A., Cardenas,M., Gibbons,M., McCann,R., Cole,R., Tsegareishvili,R., Williams,T., Jackson,Y. and Bowers,Y.

Endocrine Pancreas Consortium
Unpublished (2000)
Contact: 1002188 Melten, Klaus H. Kaestner, & Hiroshi Inoue Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical Institute
Dept of Mniversity, Howard Hughes Medical Institute
MA 02138
MA 02138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289 gargragaagragragaagaccagrrrcaracrcargaggggracargarggarrrgaca 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATTATCAGAAGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGA 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATG 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCAGTICATIGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349 GIATTATCGTGGCTTCTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAAT 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 617-495-1812
Fax: 617-495-812
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495-825
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax: 617-495
Fax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cambridge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 GCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     229 GCCCATCAGGGCCGGGTTGTAGTTCTACAATTGGAAGTAAGCTGATTGGAACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   receaargecercaegeraecraecargeaaaacaaageaarrracaraeagerrraare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 GATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATTATCGTGGCTTCTTTCTGCTGAGGACACACATTGCAAGCACAAGGAGAGTTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAA 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20.4%; Score 409; DB 14; Length 595; llarity 100.0%; Pred. No. 1.3e-81; Conservative 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 409;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CB177816 islet Homo sapiens cDNA linear EST 31-JAN-2003 is21c01.x1 HR85 islet Homo sapiens cDNA clone IMAGE:6553129 3' similar to SW:DMD_HUMAN P11532 DYSTROPHIN. [1] ;, mRNA sequence.
pools of total RNA isolated from each tissue (embryonic muscle 33.3%; juvenile muscle 33.3%; and epiphyseal growth plate 33.3% of the final RNA pool). Single pass sequencing from 5'-end"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTCAACATTAGGTCCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTC 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1440 TGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATAC 1499
                                                                                                                                                                                                                                                                                                                                                        ï
                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCA 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGT 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAAGTC 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 595)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 595)
Melton, D., Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTAAACATTAGATCTCATTIGGAAGCCAGCACAGACCAGTGGAAGCGTTTACATCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300 CATIGGIGGAGAIAITICCCACIGIGCAGAAGCAGAATGAIGTICATAGGACTITCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGCTGAAAACAAAAGAACCTGTTATCATGAATGCACTTGAGACTGTGCGACTCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dercardaadeageageagareracageagaaarreardeagareearacarereran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240 retreaggaactitragearggergecarrigaaggaggargaarraaaacagcaagec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1380 GACAGAGCAGCCTTTGGAAGGACTAGAGAAGTCTACCAGGAGCCCAGAGAGCTGCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420 GGCAGATCAACCAGTAGAGGGACTGGAAAAGGTCTATCCAGAACCAAGAGACCTATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480 readedededecedadarerenenaarrenedaadeeaadeaaarandareneda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1500 TGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540 readreddaraacraaarcracerrerecrearreddaaaagagaraargarecrer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1560 TGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCTGGATGAAAACGGGCAGAAATCCTGAGATCCCTGGAAGGCTCAGAGGATGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600 realadacrecadeererreaceadeecalreanidaacinnneergaladeee
                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                                                                             Length 663;
                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                    21.2%; Score 424.2; DB 12;
78.1%; Pred. No. 5e-85;
iive 0; Mismatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CB177816
CB177816.1 GI:28186206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 78.1
Matches 518; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1620 TGA 1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                             096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 12
CB177816/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
```

g

ద

8 g à g ò g ò 엄

à

g

à

원

ð

à

à

ò

60

180

120

240 170

1585

1645

486

426

1705

546

```
CB547284
AMGNNUC:SRPB2-00242-E3-A srpb2 (10220) Rattus norvegicus cDNA clone srpb2-00242-e3 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1236 TGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAA 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1706 GAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGC 1765
TCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAG 1405
                                                                                                                                                                                                                                                                                                                    247 AAAGGICTATCCAGAACCAAGAGACCTATCACCTGAGGAGAGGGCCCAGAATGTCACTA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 547 gadcadaaarddreceeerraanadadaadaddrecareaadreaardadergdeereaedda 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rattus norvegicus (Norway rat)
Rattus norvegicus
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="teaxon:1016"
/db_xref="teaxon:1016"
/clone="srpb="prostate tissue"
/clone="type="prostate tissue"
/clone="the="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="type="
                                                                                                      187 icardaardcacirdaaacigigcaacrcriccradcaarcaaccagradagacrad
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1466 GGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     307 »AAGTTCTCCGAAGGCAAGCAGATGTCAGAACTGAGTGGGATAAGCTAAATCTACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caaredaridaacradaccreaacrecececaecreaaccarreaaegarcereecaec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  487 cagresessarcrecrearasacrecrecassarcacrrasaaaaagreaaserraare
                                                                                                                                                                                                                                     367 creciearredecaaaagaagaraarearecrerreaaagacrecaggererreagge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1586 CCACGGATGAGCTGGACCTCAAGCTGCGAAGCTGAGGTGATCAAGGGATCCTGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1646 CCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         One Amgen Center Drive, Thousand Oaks, CA 91320-1799, USA Tel: 805 447-4881
Plate: 00242 row: e column: 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16.2%; Score 324.6; DB 14; Length 90.8%; Pred. No. 1.4e-62; tive 0; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTACCACTTTGGGCATTCAGCTCTCACGGTATAACCTC 1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 recreatificatifications for the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following the following th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 402)
Amgen EST Program.
Amgen Rat EST Program.
Unpublished (2003)
Contact: Dan Fitzpatrick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fraction > 1 kb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CB547284.1 GI:29431225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 345, Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Amgen, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST
                                                                                                                                                                                                                                                 1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
CB547284/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          / John Libror Land Dearty Vector: pBluescript II KS(+); Site_1: force="Organ: hearty Vector: pBluescript II KS(+); Site_1: force="Organ: hearty Vector: pBluescript II KS(+); Site_1: forces: Site_2: Not1; This normalized library was constructed_from 1 million independent clones. CDNA synthesis was initiated using an oligo(dT) primer, using methylated C in the first strand synthesis reaction. Following this first strand reaction, double-stranded CDNA was blunded, ligated to Not1 addapters, dispested with EGORI, size-selected, and cloned into the Not1 and ECORI compatible sites of a custom modified MCS of the pBluescript KXs+) vector. The library was normalized in 2 rounds using conditions adapted from Soares et al., PNAS (1994) 91: 9228-9212 and Bonaldo et al., Genome Research 6 (1996): 791, except that a significantly longer reannealing hybridization was used."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1285
                                                                                                                                                                                                                                                       BU313510 644 bp mRNA linear EST 28-NOV-2002
603540290F1 CSEQCHN61 Gallus gallus cDNA clone ChEST508c24 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Boardman, P.E., Sanz Ezquerro, J., Overton, I.M., Burt, D.W., Bosch, B., Fong, W.T., Tickle, C., Brown, W.R.A., Wilson, S.A. and Hubbard, S.J. A Comprehensive Collection of Chicken cDNAs.

Curr. Biol. 12 (22), 1965-1969 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1166 CCAGITCTGACCAGTGGGAAGCGICTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTAC 1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1286 AGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAA 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67 AATTGAAGGAGGATGAATTAAAACAGCAAGCACCCATTGGTGGAGATATTCCCACTGTGC 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127 AGAAGCAGAATGATGTTCATAGGACTTTCAAGAGGGAGCTGAAAACAAAAAACTGTTA 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gallus gallus (chicken)
Gallus gallus
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Archosauria, Aves, Neognathae, Galliformes, Phasianidae,
Phasianinee, Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1226 AGCTGAAAGATGAATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7 ceascacacaciacias de contracar con contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contracaca de contrac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Simon Hubbard
Department of Biomolecular Sciences
University of Manchester Institute of Science and Technology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
19.4%; Score 389; DB 13; Length 644;
Best Local Similarity 75.5%; Pred. No. 4.4e-77;
Matches 482; Conservative 0; Mismatches 156; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Gallus gallus"
/mol_type="mRNA"
/errain="Compton Line 151"
/db_xref="taxon:9011"
/clone="ChEST508c24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Smail: Simon. Hubbard@umist.ac.uk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Manchester, M60 1QD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            dev_stage="adult"
lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                BU313510
BU313510.1 GI:25821511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sex="Female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 644)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PO Box 88, Manche
Tel: 01612008930
Fax: 01612360409
                                                                                                                                                                                                                                                                                                                                                              sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12445392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22335534
                                                                                                                                    RESULT 13
BU313510
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
```

ö

업 ઠે g δ

```
CATGAACTICAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Search completed: April
Job time : 3501.87 secs
 1104
                                                                                                                                                                                               284
                                                                                                                                                                                                                                                                                                                                 1404
                                                                                                                                                                                                                                                                                                                                                                                                 1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1824
                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                        8
                                                                                           음
                                                                                                                                                       ద
                                                                                                                                                                                               ò
                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                 1296 CGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTAC 1355
                                                                                                                  TCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTA 1415
                                                                                                                                                                                 CCAGGAGCCCACAGCAGCTCCTCAGAGAGAGCCCACAATGTCACTCGGCTTCTACG 1475
                                                                                                                                                                                                                                                1476 AAAGCAGGCTGAGGACATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTG 1535
                                                                                                                                                                                                                                                                                                                 GCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGA 1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2874 bp DNA linear GSS 15-DEC-2003 VIRTUAL TRANSCRIPT, partial sequence,
TGATGAGTTGAGCCGGCAGGCACCTATTGGTGGCGATTTTCCAGCAGTTCAGAAGCAGAA 343
                                                                                                                                                223
                                                                                                                                                                                                                 222 CCAGGAGCCCAGAGAGCTGCCTCCTGAAGAAGAGCTCAGAATGTCACTCGGCTCCTACG 163
                                                                                                                                                                                                                                                                              162 AAAGCAGGCTGAAGATCAACACTGAATGGGACAAATTGAACTGCACTCAGCTGATTG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryotta, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia; Butheria, Primates, Catarrhini, Hominidae, Homo.

1 (Apaes 1 to 2874)

Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,

Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,

Reritera, S., Wano, G., Zheng, X.H., White, T.J., Sninsky, J.J.,

Adams, M.D. and Cargill, M.

Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering
them based on alignment.
                                                                                TGATGTACACAGGGCCTTCAAGAGGGAATTGANAACTAAAGAAGCTGTAATCATGAGTAC
                                                                                                                                         282 TCTGGAGACTGTGAGAATATTTCTGACAGCAGCCTTTTGGAAGGACTAGAGAACTCTA
                                                                                                                                                                                                                                                                                                                                          GCAGCGAAAAATAGATGAGGCTCTTGAAAGACTGCAGGAACTTCAGGAAGCTGCCGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Toda, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 29; Length 2874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 310.8; DB 29;
Pred. No. 2.8e-59;
0; Mismatches 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /locus_tag="HCM3260"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                   GCTGGACCTCAAGCTGCGCC 1615
                                                                                                                                                                                                                                                                                                                                                                                                                  23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens DRP2 gene,
genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY408546.1 GI:39764517
                                                                                                                                                                                                                                                                                                                                                                                                                  Acadeacercardracedec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 59.5%;
Matches 525; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene trios
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY408546
                                                                                  342
                                                                                                                  1356
                                                                                                                                                                                   1416
                                                                                                                                                                                                                                                                                                                   1536
                                                                                                                                                                                                                                                                                                                                                                                   1596
                     402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
AY408546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                     g
                                                                               임
                                                                                                                  ਨੇ
                                                                                                                                            g
                                                                                                                                                                                 ò
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                 à
```

```
1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTG 1943
                                                                                                                                                                                                                                                                                                                                                                  TCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGT 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CICCGCTGACTGGCAGAGAAAAAAAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGA 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1704 TCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCA 1763
                                                                                                                                                                                                                                                                                                                                                                                                                                        473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  953
                                                                                                                                              294 GGCCTTCTCAGACCACAGAGAAGCTTCAGCTCCCTCTTCAAGAGATTATTGACTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                    534 Agadeagecercarrergadagedaagaracereceedaagacagegereeagarereag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGGCTTCTACGAAAGCAGGCTGAGGGGTCAATACTGAGTGGGAAAAATTGAACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCAATGGAGGAACTAAGCACTACTCTGAGCCAAGCTGAGGAGTCCGAGCCACTTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAGAAGAATTCTCCCCCATGAAGATGGAGTAAAGTTGGTGAATGATCTGGCCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          894 ACTIGCCATTICTGATGIGCACTIGICAATGGAGAATTCCCAGGCCCIGGAACAGAICAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             954 cerccearicaaacaactacadecercaetraereagaecerraaecaecrecaearec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1014 ccacceseacririeseccresercacacacacriricionecrerenterecaserrecers
234 cardalarcrererriedaladalalalalalaladalercrecalecrecented
                                                                                                                                                                                                                       224 ACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   474 carchartcherechedachcaechcaecchrocherccaecaccarhraaeann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               crererecaccaccaccarreaceacceacrerecaccaccacrerecaccrecaccacarreases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGACCGAGTCAGGCAGCTGCATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1344 AATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGGAGCAGCCTTTGGAAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    774 GCCCATTGGGGATCTCTTCATTGATTCACTCCAGAGCACATCCAGGCTATTAAGCTGTT
                                                                                1164 AGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCT
                                                                                                                                                                                                                                                                                         354 cagocaaaaggargaggarigreagereageregeeeraagggagagaggeeerggr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1944 GGAGGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAA 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .074 GGAAAGAGCAATTTCACCCAATAAAGTTCCCTACTACATCAA 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5, 2004, 08:15:04
```

```
April 4, 2004, 12:04:07; Search time 6259.59 Seconds (without alignments) 16625.161 Million cell updates/sec
                                                                                                                                                                                                                                                                                                       US-09-845-416-9_COPY_600_3000
2401
1 açatgcattcaacatcgcca......tggatctcttgagcctgtca 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6940544
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3470272 segs, 21671516995 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                         OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                 IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_ro:*
em_sts:*
em_un:*
em_vi:*
em_tig_hum:*
em_htg_inv:*
em_htg_oinv:*
em_htg_oinv:*
em_htg_oins:*
em_htg_oin:*
em_htg_oin:*
em_htg_oin:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htgo_mus:*
em_htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_sy:*
em_htgo_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_htg_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggbbba.,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbborn,

ggbbor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                       Run on:
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	1 Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Sequence of Shortene of Shor	(Sn)
DB ID	5538621 114489 11448	cent W00229056. 1168 s. Harper, S.Q. leic acid and pe A 41 11-App. 2002 UNIVERSITY OF MI
* Query ore Match Length	25. 25. 25. 25. 25. 25. 25. 25. 25. 25.	Sequence 41 from Pai AX538621 GI:25277 synthetic construct synthetic construct artificial sequence I Chamberlain, U.S. an Mini-dystrophin nuc Patent: WO 0229056-THE I
Result No. Sc	□ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩	DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL

1621 961 1670		1670	Db 1729 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGT Oy 1201 CTCCAAGGGAGTAAAAGAGCTGATGAAAAAAAAAAAGAAC	1789	1849	1909	1381	1441	1501	1561 ACATAGGGCCTTCAGGAGGGAATTGAAAA 2149 ACATAGGGCCTTCAAGAGGGAATTGAAAA	1621	1681 2269	Oy 1741 GGCTGAGGGCTCAATACTGAGTGGGAAAAATTGAACCTC	1801	Oy 1861 CCTCAAGCTGCGCAAGCTGAGGTGATCAAGGGATCCTG	19921	OY 1981 TCTGAAGAGAACGTGAGCCACGTCAATGACCTTGCTCG
FEATURES Location/Qualifiers Source 1. :462	y Match Local Similarity 88.1%; Pred. No. 0; hes 2115; Conservative 0; Mismatches 76; Indels 210; Gaps	CARTTAGGCATGAGAACTACTCGATCCTGAAGA	Oy 61 IGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA 120 Db 859 IGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCATCACTTTCCA 918	OY 121 AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 180	Oy 181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAATGCACTATTCTCAACA 240	Oy 241 GAICACGGTCAGTCTAGGACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA 300 	Oy 301 GAGCTATGCCTACACAGGCTGCTTATGTCACCACTTGACCCTACACGGAGCCCATT 360	361	421 TGAAGTAAACCTGGACGTTATCA 	481	Oy 541 CCAGTITCATACTCATGAGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG 600 Db 1339 CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1398		661	721 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATCAGAAACT 1519 TAGCATGGAAAAACAAAAGCAATTTACATGCTCCTGGACTG	Qy 781 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAAGAACAAGGAAAATGGAGGAAGA 840	841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA	Qy 901 AGAAGATCTAGAACAAGACAAGTCAAGGTCAATTCTCTCACTCA

	1621		69
	961	TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 102	020
	1670	166	699
	1021	AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAC 108	080
4	1670	166	699
	1081		140
	14	12	ō
	1729	17	88/
	1201	CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 126 	348
	1261	TCACACAGATGTTTATCACAACCTGGATGAAACAGCCAAAAAATCCTGAGATCCCTGGA 132 	320
	1321	aggiiccgaigaigcagiccigtiacaaagacgiiiggaiaacaigaacticaagiggag 138 	380
	1381	TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 144 	440 028
	1441	GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGA 150 	500
	1501	ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT 156 	560
	1561	acatagegecttcaagaggaaltgaaaactaaagaactgtaatgatgatgatgtecttga 16; 	620 208
	1621	GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA 166 	680
	1681	GCCCAGAGAGCTGCCTCCTGAGGAGAGGCCCAGAATGTCACCGGCTTCTACGAAAGCA 174	328
	1741	GGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTCCGGTGACTGGCAGAG 18(388
	1801	AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 186 	860
	1861	CCTCAAGCTGGGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGGGGATCTCCT 19;	920
	1921	CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAAAATTGCGCC 198	
	1981	TCTGBARGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 20.	

8 6 8 6 8

6 6 6 6 6 6 6 6 6

ò

```
1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1039 GATCACGCTCAGTCTAGCACAGGGATATGAGAGACTTCTTCCCCTAAGCCTCGATTCAA 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   099
                                                                                               23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Taatattctacaattgggaagtaagctgattggaacaggaaattatcagaagatgaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGITICATACICATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           979 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         919 AGTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 ACCIDAAGIGACIDAAGAAGAACATTTTCAGITACATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCACGGTCAGTCTAGCACAGGGATATGAGAGACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCCTACACGCAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ccagrircaracccarcacagagaracaracaracacaaracaaccaracaagagaraca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               799 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255;
                                                                                               PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 5417;
                                                                                                                                                                                                                                                                 Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin mucleic acid and peptide sequences
Patent: WO 0229056-A 39 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
59.1%; Score 1419; DB 6; I
Best Local Similarity 78.1%; Pred. No. 0;
Matches 1876; Conservative 0; Mismatches 270;
                                                                                                                                                                                                                                                                                                                                                   1. .5417
/organism="synthetic construct"
/mol_type="unassigned DNA"
/db_xref="texon:32630"
/noTe="Synthetic"
                                                                                         Sequence 39 from Patent W00229056.
AX538619
                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                    AX538619.1 GI:25271163
                                                                                                                                                                                         synthetic construct
synthetic construct
artificial sequences.
       À 2866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
           2866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                              RESULT 3
AX538619
LOCUS
DEFINITION
ACCESSION
YERSION
YERYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \stackrel{\sim}{5}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2400
                                                                                                                                                                                                            1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2865
                                                                                                                                                                                                                                                 2025
                                                                                                                                                                                                                                                                                      1620
                                                                                                                                                                                                                                                                                                                         2085
                                                                                                                                                                                                                                                                                                                                                          1680
                                                                                                                                                                                                                                                                                                                                                                                                                                   1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2565
                                                                                                                                        GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCTGAAAGATGATGA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2326 CCTCAAGCTGCGCCAAGCTGAAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGCGATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2446 TCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2686 AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAAACAACTTGCTGGGACCATCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2806 GACTGCCATGAAACTCCGAAGACTGCAGAAGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                                                                                                                                                                           GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGGCTACAGGTGAAAGATGATGA
                                                                                                                                                                                                                                                                                                                                                                              2086 GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2146 GCCCAGAGAGCTGCCTCCTGAGGAGAGAGAGCCCAGAATGTCACTGGCTTCTACGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2206 GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2266 AAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2386 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gcagereeccarceaeacceaercaeccaecrecardaaecccacaeaeacririserec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2746 AATGACAGAGCTCTTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGGCTTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2341 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                   AGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAG
                                                                  TGAACTICGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                       TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                                                                                                                                                                                 1966 ATTAAGCCGGCAGCCACCTATTGGAGGCCACTTTCCAGCAGTTCAGAAGCAGAAGATGT
                                                                                                                                                                                                                                                                                        ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA
                                                                                                                                                                                                                                                                                                            2026 ACATAGGGCCTTCAAGAGGAATIGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA
                                                                                                                                                                                                                                                                                                                                                            GACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACACAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u> GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC
                                                                                                                                                                                                              ATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2401 A 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2221
                                                                                                                                                                             1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2101
1321
                               1786
                                                                    1381
                                                                                                       1846
                                                                                                                                        1441
                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                                                                        1561
                                                                                                                                                                                                                                                                                                                                                              1621
                                                                                                                                                                                                                                                                                                                                                                                                                                       1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1981
```

a

셤

ઠે

쉽

ò

6 6 6 6 6 6 6 6 6 6

ò

g

셤

1711 GGCTGAGGAGGTCAATACTGAGGAAAAATTGAACCTGCCTG	RESULT 4 AR304538 LOCUS LOCUS DEFINITION Sequence 1 from patent US 6544786. ACCESSION AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON AR304538 VERSTON OURANISM Unclassified. AUTHORS AUTHOR
1339 TAAITATTCHACAATTGGGAAGTGATTGGAACGGAAAATTATCAGAGATGAGA 1458 661 AACTGAAGTGCAAGTGGAAGTGATTCCTAAATTCAGAAATTCTCAGAGAGAG	1381 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 1440

-

3142 GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC

8 2 8 2 8

8 5 8 5 8 5 8 5 8

≿ 梲

₹ ₽ ₽

```
AX538622.1 GI:25271171
                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 98.3%;
Matches 1350; Conservative
                                                                                                      synthetic construct
synthetic construct
artificial sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1568
                                                                                                                                                                                                                                                                                                                                                                                                               1028
RESULT 6
AX538622
LOCUS
BEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                             PEATURES
                                                                                                                                                                                                                                                                                                                      DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4221
                                                              1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGGATCT 4041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCACTITICITICCACGICIGICCAGGGICCCIGGGAGAGAGCCAICTCGCCAAACAAA 2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GIGCCCTACTAIATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA 2287
                                                                                                                                                                                  CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG 1567
                                                                                                                                                                                                       GCCITCAAGAGGGAATIGAAAACIAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA 1627
                                                                                                                                                                                                                                                                     3442 GCCTTCAAGAGGGAATTGAAAACTAAAGAACTGTAATCATGAGTACTCTTGAGACTGTA 3501
                                                                                                                                                                                                                                                                                                       CGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGA 1687
                                                                                                                                                                                                                                                                                                                                                                   GAGCTGCCTCCTGAGGAGAGACCCCAGAATGTCACTGGGCTTCTACGAAAGCAGGCTGAG 1747
                                                                                                                                                                                                                                                                                                                                                                                   1748 GAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTCGCTGACTGGCAGAAAAATA 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                    3622 GAGGICAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATA 3681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG 1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Grecccracrararcaaccaceaeaacrcaaacaacrrecreeeaccarccaaaareaca 4161
                                                                                CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGAATTAAGC 1507
                                                                                                                                                                                                                                                                                                                                    3502 ccaarariricigacadadadadcerringdaagdacradadaaarririciadcaddagacccada 3561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3922 rcacceraraaccrcaecacrcresaasaccreaacaccasaresaasecresasecres
                    3322 CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGGTACAGCTGAAAGATGATGAATTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCGCCAAGCTGAGGTCAAGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3862 GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCACCGIAIAACCICCAGCACICIGGAAGACCICGAACACCACAAGGAAGCIICIGCAGGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAGGGACTTTGGTCCAGGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
    GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4102
                                                                                                                                                                                                                                               1568 (
                                                                                                                                                                                                                                                                                                                                                                      1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4222
                                                                1388
                                                                                                                                                                                     1508
                                                                                                                                                                                                                                                                                                          1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2288
      1328
                                                                                                                           1448
```

6 6 6 6 6 6 6 6 6 6

à

셤

8 8 8

1507 1087 3067 1327 3247 1387 3307 1447 3427 1567 3607 ö GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA 1267 PAT 23-NOV-2002 CGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGA 3068 ACAACTGCCAATGTCCTACAGGATGCTACCGTAAGGAAAGGCTCCTAGAAGACTCCCAAG GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCAAGA GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGCTACAGGTGAAAGATGATGAATTAAGC cesca esca contracta de contract CGAATATTTCTGACAGAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGA TTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG cegananaercrocaecarraegroccarraegaegcoagraccaegrocaegegaegcer CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA TGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGA 2948 regagalacarrearaladeereagreageagaeereageereerireealagaacrearada GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT TTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA Gaps ö Length 8689 Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 42 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
Location/Qualifiers 24; Indels linear DB 6; /organism="synthetic construct" /mol_type="unassigned DNA" /mol_type="unassigned" /note="Synthetic" DNA Score 1335.6; Pred. No. 0; 0; Mismatches 8689 bp Sequence 42 from Patent WO0229056. AX538622

Page Local Similarity 98.3% Pred. No. 0; MRIACCAS 1350; CONSETATIVE 0; MRIAACCAS 24; Indels 0; Gaps 0; MRICCAS 1350; CONSETATIVE 0; MRIAACCAS 24; Indels 0; Gaps 0; 1028 IGGGCAAACTCCTRACACCACCACCACCACCTCTTTCACACACCTCTACACA 107: 1038 TACCCCAACTCCTCCCCCCCCCCCCCCCCCCCCCCCCC	
A B S B S B S B S B S B S B S B S B S B	8 8 8 8 8 8 8
1688 GAGGTGCTCCTCGAGGAGAGAGCCCAAAATGCTCACCTCGGCTTCTACAAAACAGGCTGAG 3667 3608 GAGGTCCTCCTGAGGAGAAAATCCCAAAATGCTCACCTCGCTCAAAACAGGCTGAGGAAAAATT 1807 3608 GAGGTCCAAATGCTGAGGAGAAAATTCAACCTCCACTCCGCTGAGGAAAAATT 1807 1908 GAGGTCCAAATGCTGAGGAGAAATTCAACCTCCACTCCGCTGAGGAGGAAAATT 1807 1908 GAGGTCCAAAGTCAAGTCGAGAACTTCAAAGCCTCCAATGCAGGAGGAAATTCACTCATTGAC 397 1908 GAGGACCCCAAGCTGAGGAACTTCAAAGCATTCAAGCAGATCAACTCCTCATTGAC 397 1908 GAGGACCTCAAGTCAACTCAAGGAACTTCAAAGCAATTCACCTCCTCTTTAAA 1807 1908 GAGGACCTCAAGATCAACTCAAGAAACTCAAAGCAATTCACCTTCAATTGAC 2847 1908 GAGGACCTCAAAGTCAACTCAAGAAACTCAAAGCAATTCACCTTCAATTGAC 2947 1908 GAGGACCTCAAAATCACCTCAAAAAACTCAAAGCAATTCACATTTTGACCATTTCAAAAA 3907 2009 GAGGACCCAAAGTCAACTCAAAAAACTCAAAACAATTCAACTTCACATTTGACCTCTCTTCAAAA 3907 2009 GAGGACCTCAAATACACCAAAAACTCAAACAAAAAAAAAA	ORGANISM synthetic construct artificial sequences. AUTHORS AUTHORS TITLE Mini-dystrophin nucleic acid and peptide sequences JOURNAL Patent: WO 0229056-A 44 11-APR-2002; THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US) DOURNAL PATENTY OF MICHIGAN (US) Incation/Qualifiers Source //organism="synthetic construct" //mol type="unassigned DNA" //db_xref="taxon:32630" //noTe="Synthetic" //noTe="Synthetic" //noTe="Synthetic" //noTe="Synthetic" //noTe="Synthetic" //noTe="Synthetic"

ይ ⋩ ð ≿ સ ≿ ਨੁ ⋩ æ ≿ ď

```
2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-SEP-1993
                                                                                                 8695
                                                                                                                                                              8755
                                                                                                                                                                                              1627
                                                                                                                                                                                                                                                         1687
                                                                                                                                                                                                                                                                                       8875
                                                                                                                                                                                                                                                                                                                                                                                    1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2107
        1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9356 cadcactriciticcacercierceaederecereedadadecearciedecaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCGCCAAGCTGATGAAGGATCCTGGCAGCCCGTGGGGGGGATCTCCTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9176 GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9236 TCACCGIAIAACCICAGCACTCIGGAAGACCIGAACACCAGAIGGAAGCITCIGCAGGIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIGCCCTACTATATCAACCACGAGACTCAAACAACTIGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9416 GIGCCCTACTATATCAACCACGAGACTCAAACAACTIGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2288 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9476 GAGCTCTACCAGTCTTTAGCTCACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                    GAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTGGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC
                                                                                                                                                                                                                                                                             rerereaagareaceregagaaagreaaggeacricgaggagaarreggeeeregaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAACGTGAGGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                              CTGCACCTTTCTCTCCAGGAACTTCTGGTGTGTGTACAGCTGAAAGATGATGATTAAGC
                                                                                                                                                    GCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA
                                                                                                                                                                                                                        <u>eccricaagagagaartaaaacraaagaacrigraarcargagracrerigagacrera</u>
                                                                                                                                                                                                                                                                                                                      GAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                    GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCCCTGACTGGCAGAGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                8936 GAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCCTCTGAAA
         CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                            CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAGGGAAGGG
                                                                                                                                 CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG
                                                                                                                                                                                                                                                           CGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Argadacrecadadacrecadadececrirecrirecarereradecererea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2348 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTTGAGCCTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2228
                                                                                                                                                                                                                                                                                            8816
                                                                                                                                                                                                                                                                                                                          1688
                                                                                                                                                                                                                                                                                                                                                        8876
                                                                                                                                                                                                                                                                                                                                                                                     1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9026
                                                                                                                                                                                                                               8756
                                         8576
                                                                        1448
                                                                                                      8636
                                                                                                                                    1508
                                                                                                                                                                   9698
                                                                                                                                                                                                                                                              1628
                                                                                                                                                                                                 1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                 셤
                                                                        8 B 8
                                                                                                                                                             요
                                                                                                                                                                                              à
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8575
                                                                                                                                                                                                                  2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                           6841
                                                                                                                       6901
                                                                                                                                                      2287
                                                                                                                                                                                                                                               7021
                                                                                                                                                                                                                                                                                                                                                                                         23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGITITATCACAACCTGGATGAAAACAGCCAAAAATCCTGAGAATCCCTGGAAAAGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG
TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG
                                                                                          GIGCCCIACIAIAICAACCACGAGACICAAACAACIIGCIGGGACCAICCCAAAAIGACA
                                                                                                                                                                                                                                     TGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA
                                                           GCCGTCGAGGCCGAGCTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                      GTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                  GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                             GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                           7075
                                                                                                                                                                                                                                                                               ATGAAACTCCGAAGGCTGCAGAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 12057,
                                                                                                                                                                                                                                                                                              PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chamberlain, J.S. and Harper, S.Q.
Min1-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 47 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .12057
/organism="synthetic construct"
/mol_type="unassigned DNA"
/db_xref="texon:32630"
/noTe="Synthetic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55.6%; Score 1335.6; ilarity 98.3%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 47 from Patent W00229056.
                                                                                                                                                                                                                                                                                                                                                                                                                                       AX538627.1 GI:25271181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synthetic construct
synthetic construct
artificial sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 1350; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1268
                                                                                                                                                                                                                                                                                2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1328
   6722
                                                              6782
                                                                                              2168
                                                                                                                          6842
                                                                                                                                                         2228
                                                                                                                                                                                     6902
                                                                                                                                                                                                                     2288
                                                                                                                                                                                                                                                   6962
                                 2108
                                                                                                                                                                                                                                                                                                                                                        RESULT 8
AX538627
LOCUS
DEFINITION
ACCESSION
FERSION
FERSION
FERSION
FERSION
FORWERS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
```

g

ò q ò

ਨੇ 음 à g

d ò g

Š

```
1. .12446

| Jocation (Qualifiers | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12446 | 1. .12
                                                                                                                                                                                       Eukaryota, Merazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
I (bases 1 to 12446)
Rosenthal, A., Speer, A., Billwitz, H., Cross, G.S., Forrest, S.M. and Davies, K.E.
Two human cDNA molecules coding for the Duchenne muscular dystrophy (DMD) locus are highly homologous
Nucleic. Acids Res. 17 (13), 5391 (1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EWINILLEYQKHWETFDQNVDHITKWIIQADTILDESEKKKPQQKEDVLKRLKAEIND
IRPKVDSTRDQAAULANGDHOKKVLYBPQISENINRFAALSHRIKTKRAAIPLKEL
OFNSDIQKLLEPLAELQQKYNLKEDFNKDWYBDNEGTYKELLQRGDKLQQKTTDER
KSEEIKIKQQLLQTKHNALKDLRSQRRKKALEISHQWYQYKRQADDLLKCLDDIEKKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       얺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (09-FBB-1989) Rosenthal A., Akademie der Wissenschaften
der DDr, Zentralinstitut fuer Molekularbiologie, Robert-Roessle
Str.10, 1115 Berlin Buch, DDR
see also M18533 and M20250 for Dmd seqs.; discrepancies compared t
M18533 cDDA were located at x14298 pos. 496, 1772, 1965, 2449,
1587, 4229, 4504, 5075, 5332, 5630 and 7194.
X14298
X14298.1 GI:30845
Dmd gene, Duchenne muscular dystrophy; dystrophin.
Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 12446)
Rosenthal, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2668885
```

ô

8165 1147 8225 1207 8285 1267 8345 1327

ASLPEY DENGLANDE DINKER DINKY EDING THE KONTAGE THAN SOLLEN TO IERKRAPE THAN SOLLEN THE SEKRAPE THAN SOLLEN THE SEKRAPE SERVENCE THAN SOLLEN THE SEKRAPE SERVENCE THAN SOLLEN THE SEKRAPE SERVENCE OLD FUNDER THAN SOLLEN THE SEKRAPE SERVENCE OLD FUNDER THAN SOLLEN THE SEKRAP SEKRAPE SERVENCE OLD ILLAND SILVEN THAN SOLLEN THAN SOLLEN THE SEKRAP SE

Human mRNA for dystrophin.

DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM

REFERENCE AUTHORS

TITLE

JOURNAL MEDLINE PUBMED REFERENCE AUTHORS

TITLE JOURNAL

FEATURES

COMMENT

CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT 1447 CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGAATTAAGC 1507 TGGGCAAACATCTGTAGATGGACAGAACCGCTGGGTTCTTTTACAAGACACTCATAGA 1088 ITACTGCAACAGTTCCCCCTGGAACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA 8286 GGAGTAAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC GATGITTATCACAACCIGGAIGAAAACAGCCAAAAATCCIGAGAICCCIGGAAGGITCC GATGATGCGGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT 8466 CGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGGG CIGCACCITICICIGAGGAACTICIGGIGIGGCTACAGCTGAAAGAIGAATAAAGC CGGCAGCACCTATTGGAGGCGACTTTCCAGAGTTCAGAAGCAGAACGATGTACATAGG CGGCAGCCATTTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA 0; Gaps DB 9; Length 12446; 24; Indels Query Match 55.6%; Score 1335.6; D Best Local Similarity 98.3%; Pred. No. 0; Matches 1350; Conservative 0; Mismatches 1268 8346 1328 8406 1448 1028 8106 1208 1388 8526 1508 8586 ORIGIN g & g ò g 6 B 6 원 δ g ઠ g 8 ò 셤 ò

8405

8465

8525

8645

STICTITIACAAGACACTCATAGA

ö

Gaps

0

4; Indels

Length 13957;

9

M18533

1147

TTGCCTGGCTTACAGAAGCTGAA TTGCCTGGCTTACAGAAGCTGAA 1207 8395 1267 8455

AAAGGCTCCTAGAAGACTCCAAG

AAGGTGAAATTGAAGCTCACACA 8515

1327

NTCCTGAGATCCTGGAAGGTTCC

8575 1447 8635

1387

ATGAACTTCAAGTGGAGTGAACTT

8695

AGCTGAAAGATGATGAATTAAGC

1567 8755 1627

1507

CCAGTTCTGACCAGTGGAAGCGT

8815

TCATGAGTACTCTTGAGACTGTA

oy Oy	1568 GCCTTCAAGAGGGAATTGAAAACTAAAGAACTGTAATCATGAGTACTCTTGAGACTGTA 1627 	FEATURES Sourc	ψ
95 45	1628 CGAATATTTCTGACAGAGCAGCCTTTCGAAGGACTACAGAAACTCTACCAGAGCCCAGA 1687 	ORIGIN	/MD. Type="Laxon:9606" / Ab xref="taxon:9606" /note="EMBL/GenBank Accession N
oy Dp	1688 GAGCHGCCTCCTGAGGAGAGACCCCAGAATGTCACCGCCTTCTACGAAAGCAGGCTGAG 1747 	Query N Best Lo Matches	Query Match 55.6%; Score 1335.6; DB Best Local Similarity 98.3%; Pred. No. 0; Matches 1350; Conservative 0; Mismatches 24
oy.	1748 GAGGTCAATACTGAGTAGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATA 1807 	op Op	1028 TGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGT
ر خ م	1808 GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCGAAG 1867 	oy do	1088 TTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCT
<i>≿</i> 8	1868 CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGGGGATCTCCTCATTGAC 1927 	ζγ gb	1148 ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGA
λς q ₀	1928 TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA 1987 9006 TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA 9065	λ Q	1208 GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCA
, q ₀	1988 GAGAACGTGAGCCAGGTCAATGACCTTGCTCGCCAGCTTACCACTTTTGGGCATTCAGCTC 2047 	QY QD	1268 GATGTTTATCACAACCTGGATGAAAAAGGCCAAAAAAT
æ 8	2048 TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG 2107 	S G	1328 GAIGAIGCAGICCIGITACAAAGACGITIGGAIAACAI
ر خ خ	2108 GCCGTCGAGGACCGAGTCAGCAGCTGCATGAAGCCCACAGGAGACTTTGGTCCAGCATCT 2167	Q Q	1388 CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGC
°.	2168 CAGCACTITCTITCCACGTCTGCTGCGGGTCCCTGGGGGGGGCCATCTCGCCAAACAAA	රු දු	1448 CIGCACCTITCTCTGCAGGAACTICTGGTGTGGCTACA
	2228 GIGCCCTACTATATCAACCAGAGACTCAAACAACTTGCTGGGACCATCCGAAATGACA 2287 	ço qa	1508 GGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCA
<i>₹</i> 2 42	2288 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGACTGCC 2347	γς q _Ω	1568 GCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAAT
۲. ط.	2348 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 2401 	o da	1628 CGAATATTICTGACAGAGCACCTTTGGAAGGACTAGA
RESULT 10 AX409637 LOCUS	AX409637	oy Op	1688 GAGCTGCCTCAGGAGAGAGCCCAGAATGTCACTCG
SEFINITION ACCESSION JERSION	Sequence 2284 from Patent W00229103. AX409637 AX409637.1 GI:21442342	දුරු අධ	1748 GAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTC 8936 GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTC
SOURCE ORGANISM	Homo sapiens (human) 1 Homo sapiens Ekkarvota: Metazoa: Chordata: Craniata: Vertebrata: Buteleostomi:	ð á	1808 GATGAGACCCTTGAAAGACTCCGAGGAACTTCAAGAGGC

```
8875
 1687
                                                                                                 1807
                                                                                                                         8995
                                                                                                                                                                        9055
                                                                                                                                                                                             CTGCGCCAAGCTGAGGTGATCAAGGATCCTGGCCGTGGGCGATCTCCTCATTGAC 1927
                                                                                                                                                                                                                                                TCTCTCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA 1987
                                                                                              GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
AGADACTCTACCAGGAGCCCAGA
                                                                                                 1748
                                                                                                                       8936
                                                                                                                                                                       9668
                                                                                                                                                                                                1868
                                                                                                                                                1808
                                                                                                                                                                                                                         9026
                                                                                                                                                                                                                                                1928
                                                                        셤
                                                                                         5 6 5 6 5
                                                                                                                                                                                                                 8 8
                                                                                     PAT 14-JUN-2002
                                                                                                                                           Homo sapiens (human)
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
Alvares; C., Horne, D., Peres-da-Silva, S. and Vockley, J.G.
Gene expression profiles in liver cancer
Patent: WO 0229103-A 2284 11-APR-2002;
GENE LOGIC INC (US)
                                                                                     linear
                                                                                  AX409637
Sequence 2284 from Patent WO0229103.
AX409637
AX409637.1 GI:21442342
```

REFERENCE AUTHORS TITLE JOURNAL

us-09-845-416-9_copy_600_3000.rge

13

≿ ă

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                Eukaryoffi, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.

1 (Seas 1 to 1699)

Koenig, M., Hoffman, B.P., Bertelson, C.J., Monaco, A.P., Feener, C. and Konkel, L. M.

Complete cloning of the Duchenne muscular dystrophy (DMD) cDNA and preliminary genomic organization of the DMD gene in normal and affected individuals

Cell 50 (3), 509-517 (1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /traislation="Miwweevedcyereddownnaqpskreckohienlfsdd
QDGRLLDLLEGLTGGKLPKEKGSTRYHALNNVNKALRVLQNNNVDLNJGSTDIVDG
NHKLTLGLIWNIILHWQVRVNWNNINAGLQQTNSEKILLSWYRGSTRJYPGYNDYNFT
TSWSDGLALNALHSRPDLEWNSVVCQQSATQRLEHAFNIARYQLGIEKLLDFEDV
DTTYPDKKSILMYITSLRQULPQQVSIEAIQEVEMLPRPPKVTKEEHFQLHHQMHYSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QITVSLAQGYERTSSPRPRFRSYÄYTQAAYVTTSDPTRSPPPSQHLEAFEDKŠFGSSL
MESEVNILDRYQTALEEVLASMLLSBPDTLQAQSESISNDVEVYDQFHTHEGYMMDTAH
MESEVNILDLGSSLIGTGRLSBDEFTEVQEOMILLNSRWECLRVASMEKGSNLHFVLM
DLQNOKLKELNDWLTKTEERTRKMEEEPLGFDLEDLKRQVQOHKVLGEDLEGGGVRVN
                                                                                                                                                   PRI 25-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               On May 25, 2000 this sequence version replaced gi:340693.
Draft entry and computer-readable sequence kindly provided by
M. Xconig, 01-APR-1988 The severity of muscular dystrophy is
determined by the size of the deleted DNA segment. Deletions found
in different patients were from positions 302-2200, 473-1168,
1691-1810, and 1169-3011.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 (bases 1678 to 3830)
Hoffman, E.P., Monaco, A.P., Feener, C.C. and Kunkel, L.M.
Conservation of the Duchenne muscular dystrophy gene in mice and
                       9536 AIGAAACTCCGAAGACTGCAGAAGGCCCTTTGGATCTCTTGAGCCTGTCA 9589
ATGABACTCCGABAGACTGCAGAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 (bases 1 to 13957)
Koenig,M., Monaco,A.P. and Kunkel,L.M.
The complete sequence of dystrophin predicts a rod-shaped cytoskeletal protein
Cell 53 (2), 219-226 (1988)
                                                                                                                          13957 bp mRNA linear
Homo sapiens dystrophin (DMD) mRNA, complete cds.
M18533 M17154 M18026 M20250
M18533.1 GI:181856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science 238 (4825), 347-350 (1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="dystrophin"
/protein_id="AAA53189.1"
/db_xref="GI:181857"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           location/Qualifiers
1. 13957
/organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="Xp21.3-p21.1"
/tissue type="muscle"
/dev_garage="fetus"
/note="G00-119-850"
1. 13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mol_type="mRNA"

db_xref="taxon:9606"

chromosome="X"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  209. .11266
/gene="DMD"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="DMD"
                                                                                                                                                                                                                                                               Homo sapiens (human)
                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88018015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3282674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          659917
  2348
                                                                                                                                                   OCUS
DEFINITION
CCESSION
ERSION
EYWORDS
OURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
PUBMED
(EFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEATURES
                                                                                                           ESULT
                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
```

```
KOCRLLVSDIOTOPERINGVINGGORK KNRAEPEFASKLETELKELNTQWDHMCQQYY
ARKBALKGGLEKTUSLOKDISEMHERWTQAEESYLERDFEYKTPDELGKAVEEMKRAK
EEAQGKEAKVKLLTESVNSVIAQAPPVAGAELKKELETLTTNYQWLCTRLNGKCKTLE
EVWACHTELLSYLEKANKMINBUSETLKTTENITGGAEELSESVLDSLENLWRHSEDNP
NQIRILAGTLTDGGVMDELINEELSTFNSRWRELHEEAVRRÇKLLEGSIGSAGETEKS
LIHLIGYSELTFIDKQLAAYIADKVDAAQMPGDAQKTGOSDLYGHEISLBEMKKRAHNGKKA
AGRVLSQIDVAQKKLQDVSMKRFLEGCRANFELLGESKWILDBYGWHLALETKSVE
GEVVQSQLNHCVNLYKELSFWRKERDFRYTKTGRQIVQKKQTENPKELDERVTALKLHY
NELGAKYTEKKQLEKCLKLSRKMRKERDNYLTBWIAATDMELTKSANFGMPSNLDSE
VAMGKTQKEIEKQVLRKCITEVGBALMYLTBWIAATDMELTKSANFGMPSNLDSE
VAMGKTQKEIEKQVUHKTITKYIIQAGKKETLUSDKLSLLNSNMIAVTSRAE
EWINILLIESVQKHMETRARIANGDHCRKLVEPQISELNHFAAISHIKKBELND
IRPKVDSTRDQAANLMANRGDHCRKLVEPQISELNHFAAISHIKTGKASIPLKELE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NYTSNOGARTI TITORIES NO TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TENTING THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PENNEBAKYWYKALKELODGIOGROTVYRTLNNTGEEIIOQSSKTDASILOEKLGSLINL
RWQBYCKOLGOBRKKELEEDGIOGROTVYRTLNNTGEEIIOQSSKTDASILOEKLGSLINL
KRAQBYCKOLGOBRKKELEEDGINISERPCRDLAREPUMLEBADN ASIPLEBGKBGQLKS
KLEOVKLLVBELPLAGOGILKOLMETGGPVINVSAPISPEBCDKLINKLKGTNLOWIKVS
RALPBEKQGEIEAQIKDIGOLEKKLEDLEBOLNHLLLMLSPIRNOCHETYNOPNOEGPFD
KOPETRIANGAKOPDYBEILESKOCHLYKEKRAPTOPYKRALEDELSSEWKANNRLICGELRA
KOPETRIANGAPPTOPYTLYTOPYVYTKERPATOPYKRALEDESSEWKANNRLICGELRA
KOPETRIANGAPPTOPYTLYTOPYVYTKETRAIOGISCHAPSSIMLEVVPALABPRRAWI
BLITDWLSLLDQVIKSGRVWVGDLEDINEWIIKCKATWODLEGRRAPOLEELITAAQNIK
                                                                                                                                                                                                                                               VLOS PEFATERKEGNESDLKEKVNA I EREKĀEKFRKLODASRSAQALVEOMVNEGVNA
DSIKQASEÇLNSRMIEFCQLLSERLNMLEYONNI I AFYNOLOĢLEOMTTABUNIKIO
PPFDSEPTĀ KSQLKK CKDEVNRLSGLLOPOLERKI OS I AŁKEKGĢGPMFLDADFVAF
TNHPKQVESDVQAREKELOTI FDTLP PMRYQETMSA I RTWVQQSETKLS I PQLSVTDY
EINEORLGELQALOGSLQEOQSGI YYLSTŢVYKEMSKKA PSEL SRKYQS FEREI EGRWK
KLSSQLVEHCQKLEEQMNKLRKI QNHIQTLKKWMAEVDVFLKEEWPALGDSEI IKKĶŪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OFNSDIQKLLEPLEARIQGGVNLKEEDFNKDMNEDDNEGTVKELLORGDNLQQRITDER
KREIKIKQQLLQTKHNALKDLRSQRRKKALEISHQWYQYRQADDLLKCLDDIEKKL
ASLPBRDERREKIKEIDRELQKKKEELNAVRRQAEGLSEDGAAMAVEPTQIQLSKRWRE
IESKPAQFRRLNPGJTTVREETWMYMTEDMPLAISVPCSTYLTEITHVSQALLEVPG
LLNAPDLCAKDFEDLFKQEESELKNIKDSLQOSSGRIDIIHSKKTAALQSATPVERVKL
QEALSQLDFQWEKNNRYKDRQGREPRSVEKWRFFYDIIKTRVALGSATPVERVKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEHLLIQHYCQSLNQDSPLSQPRSPAQILISLESEERGELERILADLEEENRNLQAEY
NELKQQHERKGLSPLPSPPRWIPTSPGSPRDAELIABAKLLRQHKGRLEARMQILEDH
NKQLESQLHRILRQLLEDQPARAKVNGTTVSSPSTSLQRSDSSQPMLLRVVGSQTSDSM
GEBDLLESPPQDTSTGLEEVMEQLNNSPPSSRGRNTPGKPMREDTM"
BQCLFSAWLSEKEDAVNKIHTTGFKDONEMLSSLOKLAVLKADLEKKKOSMGKLYSLK
ODLLSTLKNKSVTQKTZAWLDNFARCWDNLVQKLEKSTAQISQAVTTTQPSLTQTTVW
ETVTTVTTREQILVKHAQEELPPPPPQKKRQITVDSEIRKRLDVDITELHSWITRSEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GLILHDSIQIPRQLGEVASFGGSNIEFSVRSCFQFANNKPEIEAALFLDWMRLEFQSM
VWLPVLHRVAAAETAKHQAKCNICKECPIIGFRYRSLKHFNYDICQSCFFSGRVAKGH
ROHYPMVEYCTPTTSGEDVRDFAKVLKNKFRTKRYFAKHPRMGYLPVQTVLEGDNMET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PVTLINFWPVDSAPASSPQLSHDDTHSRIEHYASRLAEMENSNGSYLNDSISPNESID
```

8395

8216 regangalacarroaraalangereangangangangangkerenterangalangangangkerenterangan 1028 TGGGCAAACATCTGTAGATGGACAGAACGGCTGGGTTCTTTTACAAGACACTCATAGA

TTACTGCAACAGTTCCCCCTGGAACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA 8276 tracrecadoracecercedadecredadadarrecrederegerracadadecrea

1088

ó

Gaps

. 0

24; Indels

'Match 55.6%; Score 1335.6; Local Similarity 98.3%; Pred. No. 0; les 1350; Conservative 0; Mismatches

Query Match Best Loca Matches

DB 9; Length 13957;

දි පි

\$ B \$

90 A2

Db 9476 GAGCTCTACCAGTCTTTAGCTGAATAATGTCAGATTCTCAGCTTATAGGACTGC Qy 2348 ATGAAACTCCGAAGACTGCAGACCTCTTGCTTGGATCTCTTGAGCCTGTCA 2401 Db 9536 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 2401	RESULT 13 AR220819 LOCUS AR220819 LOCUS BEFINITION Sequence 60 from patent US 6426186. ACCESSION AR220819 VERSION AR220819.1 GI:23327696 SOURCE Unknown. ORGANISM Unknown. AR220819.1 GI:23327696 SOURCE ORGANISM TILLE BONE remodeling genes JOHNRAL FEATURES Location/Qualifiers COURNAL FEATURES Location/Qualifiers AUTHORS JOHNSAL FEATURES Location/Qualifiers AUTHORS Location/Qualifiers AUTHORS AUTHORS Location/Qualifiers AUTHORS AUTHORS Location/Qualifiers AUTHORS AUTHO	Query Match Query Match Best Local Similarity 98.3%; Pred. No. 0; Matches 1350; Conservative 0; Mismatches 24; Indels 0; Gap	OY 1028 TGGGCAAACATCTGTAGATGGACGGAAGACGCTGGGTTCTTTTACAAGACACTCATAGA	Oy 1088 TTACTGCAACAGTTCCCCCTGGAACAGTTTCTTGCCTGGCTTACAGAAGCTGAA	Db B336 ACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGACTCCAAG	Oy 1208 GGAGTAAAAGAGCTGAAGAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA	OY 1268 GAIGITHATCACAACCTGGAAGAGCCAAAAAATCCTGAGATCCTGGAAGGTTCC	Oy 1328 GANGANGCAGTCCTGTTACAAAGACGTTTGGALAACTTCAAGTGAACTTTCAAGTGAACTTTCAAGTGAACTTTCAAGTGAACTTTCAAGTGAACTTTGAACTTTGAACTTCAAGTGAACTTTGAACTTCAAGTGAACTTTGAACTTCAAGTGAACTTTGAACTTCAAGTGAACTTTAAGATAAACATGAACTTCAAGTGAACTTTAAGATAACATGAACTTCAAGTGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACTTTAAGATGAACATAAGATGAACTTAAGATGAACTTAAGATGAACTTAAGATGAACATAAGATGAACTTAAGATGAACTTAAGATGAACTTAAGATGAACATAAGATGAACTTAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACTTAAGATGAACTTAAGATGAACTTAAGATGAACTTAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACTTAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACTTAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAACATAAGATGAAGATGAACATAAGATGAACATAAGAAGATGAAGATGAAGATAAGATAAGATGAAGATAAGATAAGATGAAGATGAAGATAAGATAAGATGAAGATGAAGATAAGATAAGATAAGATGAAGATA	Qy 1388 CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGGGT	QY 1448 CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGAATTAAG DD 8636 CTGCACCTTTCTCTGCAGGAACTTCTGGTGGGTACAGCTGAAAGATGATGATGATGAAGATTAAG	Qy 1508 CGGCAGCCCTATTGGAGGCGACTTTCCAGCAGTTCAGAACCAGAACGATGTACATAGG	Oy 1568 GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTGAGACTGTA
GBAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA 1267	GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT 1387 GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT 5575 CGGAAAAAGTCTCCCAACATTAGGATCCCATTTGGAAGCCAGTTCTGAACTGGAAGACTT 6835 CTGCACCTTTCTCTGCAGCAACTTTGGTTGGCTACAGTTCTGGAAGAGGT 1447 CGGAAAAAGTCTCTCTGAACATTAGGTCCCATTTGGAAGCCAGTTCTGAAGAGGT 1507 CTGCACCTTTCTCTGCAGAACTTCTGGTTGGGTACAGATGAAGAGATGATAAACC 8695 CTGCACCTTTCTCTCTGCAGAACTTTCTGGTTGGTTAAGATGAAAGATGATGAATTAAACC 1507 CTGCACCCTTTTCTCTGCAGAACTTTTCCAGCAGTTCAAAAGATGATGAATGA	CCAGA 168 CCAGA 887	GAGCTGCCTCCTGAGGAGGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG 1747 	GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATA 1807 	GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG 1867 	CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC 1927 	TCTCTCCAAGATCACCTCGAAAAGTCAAGGCACTTCGAGGAAAATTGCGCCTCTGAAA 1987 	GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC 2047 	TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG 2107 	GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT 2167 	CAGCACTITCTITCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAA	GIGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA 2287

\$ B \$

9 & g

8 8 8

8 8 8

20 00 00 00

8 8 8 8

ප් ['] ශ්

୪ ବ ୪

ą ⋧ 9 \gtrsim ત્ર ⋩ સ ⋩ á ⋩ હ ⋩ g ⋩ ત્ ⋩ ન ⋩ ď ⋩ ä ≈ á ⋩ ð

```
MCGULLALIANTYTEREHILVKHARAMLININUAGLERESAGIJAGUTTULEHSYTTRE
AVLOS PEFALYRKEGNESDLKEKTVALIEREKAKREDVOUTELHSYTTREUN
ADSIKQASEQURSEKNEYEREKLONITEREKAKREDVOUTELHSYTTREUN
ADSIKQASEQURSEKNEYERERLONITEREKAKTONITTFYOLOGIZEVYTTABNUKT
APTIKESPTATKSCINKICKONENITERERLANDINITTFYOLOGIZEVYTTABNUKT
APTIKESPTATKSCINKICKONENITERERLANDINITTFYOLOGIZETKINDOUTTE
YDINMEQRIGGELOGIGOSULONINUSTYTVENSKKAPISDISKRYOSEFEI EGR
WKKLSSQLVBETGCKLEBOMAKLKIONHIKTIKKWITEVDVPERKERPRAGDEBILKR
QLKQCRLLVNDIOTIOPSLNSVNBGAQKMKNBAZEPETSAGRETELEREINTONDYNMKR
YDARKEALKOGIDKTVSLOGNINVISTYNENINUSTERENINTONDYNMKR
VYARKESQLVBETGCKLEBOMAKLKIONHIKTIKKWITTENINGGABETALERINTONDYNMKR
VYARKESAKVKLIFTESNINNYIAQARPAAORALKKEIDTITTNYOWLCTRANGKCK
VYARKESAKOKHELLSYLEKANIKKIONHIKTIKKWITTENINGGABETALENINGONDYNMKR
AKESAKOKHELLSYLEKANIKKIONHIKTENINNESHEHBEAVKROMLIDSLENINGHSED
NNOINTILAQTILTOGOVNDINIERIETYRSRMELHBEAVKROMLINGEK
ETAGNYACWHELLSYLEKANIKKILDYNBYNBEQHELDSKOMLINGEREKHNOGK
ETAGNYACWHELLSYLEKANIKKILDYNBYNBEQHERANTANIKL
HYNELGAKVYLSOLDYONGYKLLODNYOY ITNNIITQAJALLDESBUKKYPOGILBKKHNOGK
ETAGNYACKALOONYOY ITNNIITQAJALLDESBUKKYPOGNEDILKKTLABN
NDIRRYNDSTRIDAANIMANRGDHCKKVVEPKI SELNHRPAATSHETKS
KLASLIPSPEDLARENIONYONIKEEDFRYNDMSEDDROGTYKRABEN
NDIRRYNDSTROQAANIMANRGDHCKKVVEPKI SELNHRPAATSHETKS
KLASLIPSPEDLARENIONYONIKEEDFRYNDMSEDDROGTYKRABEN
NDIRRYNDSTROQAANIMANRGDHCKKVVEPKI SELNHRPAATSHETHETHYNGANILLSHINGNYONITEREPROMOGOL
KKLASLIPSPEDLARENIONONIKEEDFRYNDMSEDROGTONITERITYRYABERA
KLASLIPSPERRIKKEEDRONIGEEDFRYNDMSEDROGGESEN
REIERSKRAPERIKKOOLLOYKWINKENDENDMSTROFTYNDMITTENINUSQOLITE
URWOBYCKOLLAEBLPRACKCELNAVRROADELLDROGTONITERITYRYANTANTS

KCASLIPSPERRYKYLKEIDROGGESONNYONITEREPROMOGOL
KKKLEOVKLLAEBLPRACKCELNAVRROADELLDROGNYONITEREPROMOGOL
KKKLEOVKLLAEBLPRACKCELNAVRROADELLORGROANAVEDTOLOGNITKE
VSRNIBERKORTEREKKREERENNINGNEDDROGTOLEKULTARDYSANDTREUTONINUS
VSRNIBERKORTEREKKREERENNINGNEDORGROANAVANTENINUS
SECHNANDENOVROLLAEBLPRACKCELNAVRROADELLENDENNYONITERILONINUS OND TREPROVONITERILONINUS OND TREPROVONITERILONINUS OND TREPROVONITERILONINUS OND TREPROVONITERILONINUS OND TREPROVONITER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LINYDTGRTGRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRINGSTRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NHKLTIGLINNI ILHNOVKNYKNINMGLOQTNSEKILLISWVRQSTRNYPOVNUNFT
TYROSOGLALAALIHSHRDDEDWNSVVCOGSATGREBHAFN AKYGLGTEKLIDDEDV
ATTYPDKKSILMALIHSHRDDEDWNSVVCOGSATGREBHAFN AKYGLGTEKLIDDEDV
ATTYPDKKSILMALIHSHRDLEDWNSVCREBHAFN AKYGLGTEKLIDDEDV
ATTYPDKKSILMALIHSHRDLEDWNSLEBHOIHOWHYSO
OITVELAGGYERAPSPPKPREKSYAYTOAAYVTTSDPTRSPLPSQHLETPEDKSFGRS
LITTERALIDSOYQTALBEVLSKILSSADDLQAGGESISNDVEREVEZGFHHEGTYMDLTS
HOGRVGANVLOLGSOLIGTGKLSEDERTEVOEGMYLINSKWECLRVASNEKGSSILHKVY
MDLQNQQLKELNDWLTKTESRTRKMEKEPLGPDIEDLKRQVQQHKVLOEDLEGGEQVRV
NESTHWVVDVDESGGHAFALLEQUEKTALGENGENTICHGRESWYLLGDILLKRQRSFT
BEQCLFSAWLSEKERDNNK HYTTGFKOGSFYLSNLOKLAVLKKTDLEKKKQTMDKLCSI
NQDLLSALKONTVVAHKMEAMLDNFAQRWDNLVQKLEKSSAQISQAVTTTQFSTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IGGDFPAVOKONDVHRAFKRELKTKEPVINSTLETVRI FLTEQPLEGLEKLYQEPREL
PPEERAQNVTRLLRKQAEEVNTQWEKLNVHSADWQRKIDBALERLGELGBATDELDLK
LRQAEVIKGSWQPVGDLLIDSLQDHLEKVKALRGEITPLKENVSYVNDLARQLTTLGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OLSPYNLATI EDIATEWILLOYA I EDRIROHEBAHRDFGPASOHFLSTSVOSPWERA I
SPNKVPYY INHETOTTCWDHPKMTELYQSLADLINNVRFSAYRTAMKLRRLOKALCLDL
LSLSAACDALDQHNLKQNDQPMDILQVINCLTTIYDRLEQEHNNLVNVPLCVDMCLNW
                                                                                                                                                                                                                                                                                                                                                                                                         /tränslation="MLWWEEVEDCYEREDVQKKTFTKWVNAQFSKFGKQHIENLFSDI
ODGRRLLDDLLEGLTGQKLPKEKGSTRVHALNNVNKALRVLQKNNVDLVNIGSTDIVDG
                                                                                                                                                                                                                                      /product="dystrophin"
/protein_id="AAC83646.1"
/db_xref="GI:3982751"
                                                                                                                                                                              codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                        5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9236 TCACCGIATAACCTCCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG 9295
                                                                                                                                                                                                                                                                                                                                                                                                                     GAGGICAATACTGAGIGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATA 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1928 TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9416 GTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA 9475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAM 09-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris (dog)

Canis familiaris (dog)

Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

1 (bases 1 to 13887)

Carville, K.S., Mann, C.J., Schatzberg, S.J. and Wilton, S.D.

Direct Submission

Submitted (04-JUN-1998) ANRI, Pathology, University of Western

Australia, Verdun Street, Nadlands, WA 6018, Australia
GAGCTGCCTCCTGAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                   GAGCTGCCTCCTGAGGAGAGAGCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGGICAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGAGACCCTTGAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9056 CTGCGCCAAGCTGAGGTCAAGGGATCCTGGCAGCCGGGGGGGTTCTCCTCATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9176 GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9296 GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2288 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9476 GAGCTCTACCAGTCTTTAGCTGACTGAATAATGTCAGATTCTCAGGTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1988 GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9536 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 9589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2348 ATGAAACTCCGAAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF070485 13887 bp mRNA linear Canis familiaris dystrophin mRNA, complete cds. AF070485.1 GI:3982750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .13887
/organism="Canis familiaris"
/mol_type="mRNA"
/strain="breed Golden retriever"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2228
                                                                                                                                                                                     1688
                                                                                                                                                                                                                                                                                               8876
                                                                                                                                                                                                                                                                                                                                                                                                                     1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
APO70485
JOCUS
DEFINITION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION
ACCESSION

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EATURES
```

11-DEC-2001

2227

9481

2167

```
GAIGTTTATCACAACCTGGAIGAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCC 1327
Mus musculus (house mouse)
Mus musculus
Bukaryota Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Musinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGTCAGAGAGCTGATGAAACCATGGCAAGATCTCCAAGGGAGAAATTGAAACTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TIACTGCAGCAGTTCCCTCTGGACCTGGAGAAGTTTCTTTCCTGGATTACGGAAGCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA
                                                                    GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                  9362 GCCATTGAGGACCGCATCAGGCAGCTGCATGAAGCGCACAGGGACTTTTGGACCAGCCTCC
                                                                                                                                                                      9422 cadcacriccirriccacricrerccaederccreedadadadecarcreadaaa
                                                                                                                                                                                                                                                                9482 GIGCCCIACIAIAICAACCACGAGACCCAACAACIIGCIGGGACCAICCCAAAIGACA
                                                                                                                                                                                                                                                                                              2288 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                      9542 GAGCTCTACCAGTCTTTAGCTGACCTGATAATGTCAGGTTCTCAGCTTACAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8207 resegadakenreardadagagadagagedagedageergerringgdagadaerekrasa
                                                                                                                                                                                                                                 2228 GIGCCCIACIAITAICAACCACGAGACICAAACAACTIGCIGGGACCAICCCAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ishikawa,K., Asai,S., Takahashi,Y., Nagata,T. and Ishii,Y.
Method for examining ischemic conditions
Patent: WC 0188188-A 504 22-NOV-2001;
School Jural Person Nihon University (JP)
Location/Qualifiers
1. 13815
/organism="Mus musculus"
/mol_type="unassigned DNA"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 13815;
                                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47.6%; Score 1143.6; DB 6; Length .larity 89.5%; Pred. No. 8.3e-284; Conservative 0; Mismatches 144; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AX306153 13815 bp 1 Sequence 904 from Patent WO0188188. AX306153 AX306153.1 GI:17645441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 1230; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1268
                                                  2048
                                                                                                               2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
AX306153
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B 6
                                                                                                                                 g
                                                                                                                                                                                               g
                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                     셤
                                          8
                                                                         셤
                                                                                                  ò
                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9241
                                                                                                                             1087
                                                                                                                                                                                                                                                                                                                1267
                                                                                                                                                                                                                                                                                                                                                                                                        8581
                                                                                                                                                                                                                                                                                                                                                                                                                                       1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC 2047
                                                                                                                                                                                                                       8401
                                                                                                                                                                                                                                                                                 8461
                                                                                                                                                                                                                                                                                                                                             8521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCTGCCTCGAGGAGAGCCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG 1747
                                                                                                                                                                                        Tractecaacagtroccorregacoregaaaagtricirecoregotracagaagcreaa 1147
                                                                                                                                                                                                                                                                                                                                                                         GATGITITATCACAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCC 1327
                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCGCCAAGCTGAGCATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTTCATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTCTCCAAGATCACCTCGAAAAAGTCAAGGCGCTTCGAGAAAATTACACCTCTGAAA
                                                                                                                                                                                                                                                     1148 ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG
                                                                                                                                                                                                                                                                                    ACAACTGCCAACGTCCTGCAGGATGCCACCCATAAGGAAAGGCTTCTAGAAGATTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                     GATATCTATCACAACCTGGACGAAAATGGCCAAAAAGTCCTGAGATCCCTGGAAGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGGTGAAAGATGAATTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cescadedacceatresadeacatraccasesacatecadaacadaarsarsacada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8822 GCCTTCAAGAGGGAATTGAAAACGAAAGAACTGTAATCATGAGTACTTGAGACTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAAAACTCTACCAGGAGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAATATITICTGACAGAGCAGCCTTTAGAAGGACTAGAGAACTCTACCAGGAGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gaecrecercadadadadecedadarereacacoderecracodadadecadecrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGACTGGCAGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGTCAACACTCAGTGGGAAAAACTGAACGTGCACTCTGCAGACTGGCAGAGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                             redecaagcarccaraaaaarrgagrgagcgagaggcrgcrcrggaagcaaacccacaga
                                                                                                                                                                                                              TTACTGCAACAGTTCCCCTTGGACCTGGAGAAGTTCCTTGCCTGGCTTACAGAAGCCGAA
                                                                                                                                                                                                                                                                                                                GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA
                                                                                                                                                                                                                                                                                                                                             GGAGTAAGAGAGCTGATGAAACAATGGCAAGACCTCCAAGGAGAAATCGAAGCTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACGATGCATGTTGCAAAGACGTTTGGATAACATGAACTTCAAGTGGAGCGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cegaaaaagrerereaacarraegrereacrregaagecagrrereaceagregaagegr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA
                                                                                                                             TGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                  Gaps
                                                                   Length 13887;
                                                                                                  ö
                                                                 Query Match
Best Local Similarity 91.2%; Pred. No. 4.8e-293;
Matches 1252; Conservative 0; Mismatches 121; Indels
        /rpt_type=tandem
/rpt_unit="ca"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1808
                                                                                                                                 1028
                                                                                                                                                              8282
                                                                                                                                                                                            1088
                                                                                                                                                                                                                         8342
                                                                                                                                                                                                                                                                                      8402
                                                                                                                                                                                                                                                                                                                 1208
                                                                                                                                                                                                                                                                                                                                                 8462
                                                                                                                                                                                                                                                                                                                                                                              1268
                                                                                                                                                                                                                                                                                                                                                                                                                                         1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1388
                                                                                                                                                                                                                                                                                                                                                                                                             8522
                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                  ઠે
                                                                                                                                                                                                                       ВÞ
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                         B
                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

1207

Gaps

.,

8 % 8 %

ŏ

ă

	うょう こくりまりじょう アンコージョック カンコング・サイト きょうしょうじょう きんかいしょく オンコース・カンコース・カンコース・カンコース・カンコース・カンコース・カンコース・ファン・ファン・コース・ファン・コース・ファン・コース・ファン・ファン・ファン・ファン・ファン・ファン・ファン・ファン・ファン・ファン	
יי מ		
8507		
1388	CGGAAAAAGCTCTCTAAATTTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT 1447 	
1448	CTGCACCTITCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGC 1507 	
1508	CGGCAGGCACCTATTGCAGGCGACTTTCCAGAAGCAGAACGAGAACGATGTACATAGG 1567	
1568	GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA 1627 	
1628	CGAATATTTCTGACAGAGAGCGTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGA 1687 	
1688 8867	GAGCTGCCTCCTGAGGAGGAGCCCAGAATGTCACCGCCTTCTACGAAAGCAGGCTGAG 1747	
1748	GAGGICAATACITGAGIGGGAAAAAITGAACCIGCACITCCGCIGACITGACTGGCAGAAAAATA 1807 	
1808	GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG 1867	
1868	CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGGGATCTCCTCATTGAC 1927	
1928 9107	TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGAAATTGCGCCTCTGAAA 1987 	
1988 9167	GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC 2047	
2048	TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG 2107	
2108	GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGACTTTGGTCCAGCATCT 2167	
2168	CAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAA 2227 	
2228	GTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA 2287 	
2288	GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC 2347 	
2348	ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 2401	

Search completed: April 5, 2004, 02:39:52 Job time : 6272.59 secs

```
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd
```

ייים אין דירים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים בייים	nodel	April 4, 2004, 11:55:32; Search time 619.552 Seconds (without alignments) 16463.377 Million cell updates/sec	00 3000
	OM nucleic - nucleic search, using sw model	łun on: April 4, 2004, 1:	le: US-09-845-416-9 COPY 600 3000
	Σ	₹un	Pitle:

US-09-845-416-9_COFY_bUU_sUUU 2401 1 adatgcattcaacatcgcca......tggatctcttgagcctgtca 2401 fitle:
perfect score:
}equence:

3373863 seqs, 2124099041 residues Gapop 10.0 , Gapext 1.0 IDENTITY NUC scoring table: searched:

6747726

length: 0 length: 2000000000 finimum DB seq faximum DB seq

Total number of hits satisfying chosen parameters:

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

geneseqn2003bs:* geneseqn2003cs:* geneseqn20048:* Jatabase :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

STIMMARTES

	Description	Aad37237 Human dys	Aad37257 Adeno-ass	Aad37263 Adeno-ass	Aad37264 Adeno-ass	Aad37234 Human dys	Aad37256 Adeno-ass	Aad37262 Adeno-ass	0	Aad37255 Adeno-ass	Abk81999 DNA encod	80	σ.	Abk81998 DNA encod	Aad37240 Human dys	Aad37259 Adeno-ass	Abk81997 DNA encod		Abk82000 DNA encod	Aad37229 Human dys	Abk82005 cDNA enco	Abk82002 DNA encod	Aan90338 Sequence	Abk81959 cDNA enco
SUMMARIES	QI	AAD37237	AAD37257	AAD37263	AAD37264	AAD37234	AAD37256	AAD37262	AAD37230	AAD37255	ABK81999	AAD37238	AAD37258	ABK81998	AAD37240	AAD37259	ABK81997	AAD06794	ABK82000	AAD37229	ABK82005	ABK82002	AAN90338	ABK81959
	DB	9	ø	9	9	φ	vo	9	9	9	ø	v	ω	o	9	9	φ	ហ	φ	v	9	9	Н	ø
	Length DB	3858	4825	4848	2060	3999	4966	4990	4182	5149	5462	3531	4498	5339	3510	4476	5417	5952	8689	11058	11241	11443	12923	13957
ok	Query	100.0	100.0	100.0	100.0	93.7	93.7	93.7	86.1	86.1	76.6	72.3	72.3	71.8	70.6	70.6	59.1	55.6	55.6		55.6	55.6	55.6	55.6
	Score	2401	2401	2401	2401	2250	2250	2250	2067	2067	1839.4	1737	1737	1725	1695	1695	1419	1335.6	1335.6	1335.6	1335.6	1335.6	1335.6	1335.6
	Result No.	-1	(7)	m	4	ហ	9	7	œ	თ	10	11	12	.13	14	15	16	17	18	19	20	21	22	23

Abt10904 Human bre	Abn95786 Gene #228	Abs69900 Human dys	Abs70403 Human bon	Aad37232 Human dys	Aad37260 Adeno-ass	Aad37242 Human dys	Aav18885 Mus muscu	Abk81960 cDNA enco	Abi99799 Mouse isc	Aat27558 Shuttle v	Aaz48568 A rod sho	Aad37231 Human dys	Aad37235 Human dys	Aaz48567 A rod sho	Aaz48569 A rod sho	Humar		Aaz48566 A rod sho	Aan97129 Partial s	Aad37243 Human dys	Abt41896 Toxicity
ABT10904	ABN95786	ABS69900	ABS70403	AAD37232	AAD37260	AAD37242	AAV18885	ABK81960	ABI99799	AAT27558	AAZ48568	AAD37231	AAD37235	AAZ48567	AAZ48569	AAD37241	AAD37239	AAZ48566	AAN97129	AAD37243	ABT41896
9	9	ø	9	9	φ	ø	0	9	φ	N	m	9	φ	٣	'n	ø	φ	m	Н	φ	7
13957	13957	13957	13977	2169	4414	3446	13815	13815	13815	19307	4402	1991	1667	4402	4075	1821	1340	3747	3275	1434	10705
55.6	55.6	55.6	55.6	55.1	52.6	52.1	47.6	47.6	47.6	47.6	45.6	45.5	44.9	42.5	42.4	40.6	31.2	29.5	26.4	24.5	20.8
1335.6	1335.6	1335.6	1335.6	1323	1263	1251	1143.6	1143.6	1143.6	1143.6	1093.8	1092.2	1077	1021.2	1018.8	976	750	709.2	633.2	583	498.6
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

```
Human, dystrophin minigene, muscular; gene therapy, utrophin, s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                               Human dystrophin minigene delta3849.
       AAD37237 standard; DNA; 3858 BP.
                                                                                                                              27-APR-2001; 2001WO-US013677.
                                                                                                                                           28-APR-2000; 2000US-0200777P.
                                (first entry)
                                                                                                                                                                                    WPI; 2002-049342/06.
                                                                                                                                                        (XIAO/) XIAO X.
                                                                                                   WO200183695-A2.
                                                                                       Homo sapiens.
                                 21-AUG-2002
                                                                                                                08-NOV-2001.
                    AAD37237;
                                                                                                                                                                      Xiao X;
AAD37237
```

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1; Page 48-49; 71pp; English.

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular

8 & 8	ନ୍ସ (<u>አ</u>	À 43 8	A q	AG Q	Ao da d	À 40 8	À 9 8	À Q (λ A .	AG qa	da da	o da	o do		oy do	
CC dystrophy (BMD) in a mammalian subject. The present sequence is human CC dystrophin minigene delta3849 containing nucleotides 1-1668 (N-terminus, CC hinge H1 and rods R1, R2), 8059-10227 (rods R22, R23 and R24, hinge H4 CC and CR domain) and 11047-11058 (dystrophin last 3 amino acids) XX Sequence 3858 BP, 1189 A; 866 C; 905 G; 898 T; 0 U; 0 Other;	Query Match 100.0%; Score 2401; DB 6; Length 3858; Best Local Similarity 100.0%; Pred. No. 0; Matches 2401; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	OY 1 ACATGCATTCAACATGGCCAGATATCAATTAGGCATAGAGAAACTACTGGATCCTGAAGA 60 	OY 61 TGTTGATACCACCTATCCAGATAAGAAGTCCATCATAATGTACATCACATCACTCTTCCA 120	QY 121 AGTITTGCCTCAACAAGAGACATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 180	OY 181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCCAACA 240 	OY 241 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA 300	OY 301 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCCTTGACCCTACACGGAGCCCATT 360	QY 361 TCCTTCACAGCATTIGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATIGATGGAGAG 420	OY 421 TGAAGTAAACCTGGACCGTTATCAAACACTTTAGAAGAAGTATTATCGTGGCTTCTTTC 480	OY 481 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 540	Qy 541 CCAGITICAIACICAIGAGGGGIACAIGAITTGACAGCCCATCAGGGCCGGGIIGG 600	Qy 601 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGAGAGA 660 	Qy 661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTTCAAGATGGGAATGCCTCAGGGTAGC 720 	OY 721 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAATCAGAAACT 780 	Qy 781 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAACAAGGAACAAGGAAANTGGAGGAAGA 840 	OY 841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA 900	Oy 1901 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA
0000×0		υд	σд	\$ B	O D	σα	υд	0 0	σп	υд	σд	UΩ	UA	υд	σд	υр	O

. da	1500	in
ර ස		TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACAACTTAAGGTATTGGG 1020
3 8		GATGAGA BARANTA CAGAGA
F : 음	62	67
<i>&</i>	1081	TTACAGA 114
QQ	1680	racakcadricecergeacergaaaaaagrirerreeergeerracaga 173
දු දු	1141	SCCAATGTCCTACAGGATGCTACCGGTAAG
ð í	500	AGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 12
9 8	1261	ICCAAGGGGAGIAAAAGAGCIGAIGAAACAAIGGCAAGACCICCAAGGIGGAAIIIGAAGC CACACAGAIGIIIIAIGACAACCIGGAIGAAAAAAGGCCAAAAAAIGCIGAGAICCCIGGA 132
. qa	98	
. YO 4	1321	AGGITCCGAIGAIGACGGICCTGITACAAAGACGITTGGAIAACAIGAACITCAAGIGGAG 1380
} · 8	1 80	TICGGAAAAAGTCICICAACATTAGGICCCATTIGGAAGCCAGITCIGACCAGIG 144
ପ୍ର	98	
δ	1441	GCAGGAACTTCTGGTGT
qa	2040	GICTECTION OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROLL OF THE CONTROL OF
λō	20	GCAGAACGATGT 156
අු	2100	GGCGGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT 215
රි සි	1561	ACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGGACTACTTGA 1620
õ	19	FIACGAATATITCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA 168
qq	2220	GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA 2279
ò	1681	TGAGGAGAGCCCAGAATGTCACTGGGCTTCTACGAAAGCA 17.
qq	2280	CCAGAGAGCTGCCTCCTGAGGAGGCCCAGAATGTCACTCGGCTTCTACGAAAG
Š	74	80
Q Q	2340	TCAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGAG 239
ð :	80	CAAGAGGCCACGGATGAGCTGGA 186
ag	40	IAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 245;
ठे र	98	CAAGGGAICCIGGCAGCCCGIGGGCGAICICCI 192
g	40	JAAGCIGCGCAAGCIGAGGIGAICAAGGGAICCIGGCAGCCCGIGGGCGAICICCI 251
දු දු	1921	CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 1980
ò	80	SAAAGAAGGIGAGCCACGICAAIGACCIIGCICGCCAGCIIACCACIIIIGGGCAF 2
. da	ις O	63

invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DWD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence

888888888888

Sequence 4825 BP; 1369 A; 1175 C; 1204 G; 1077 T; 0 U; 0 Other;

```
2340
2100
                                    2160
                                                       2759
                                                                                                              2280
                                                                                                                                                                                         2400
                                                                                                                                                                                                                                                                                                                                                                          Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                        AGCATCTCAGCACTTTCTTTCCACGCTCTCTGTCCAGGGTCCCTGGGGGAGAGACCATCTCGCC
                                                                                                              AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA
                                                                                                                           AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG
                                                                                                                                                                2341 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                                                                                                                                                                                                          2940 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                2640 TCAGCTCTCACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                      ccadedecerceadedeceadecadeadecadeardaadeceadadeacrirderee
                                    GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAGGGACTTTGGTCC
TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                         Adeno-associated virus vector plasmid, AAV-MCK-delta3849.
                                                                                                                                                                                                                                                                                                   ВР.
                                                                                                                                                                                                                                                                                                DNA; 4825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                    AAD37257 standard;
                                                                                                                                                                                                                                  A 2401
                                                                                                                                                                                                                                                     3000 À 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                           Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                        21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-NOV-2001
                                                          2700
                                                                           2161
                                                                                               2760
                                                                                                                                                       2281
                                                                                                                                                                                                                                  2401
                                                                                                                                                                                                                                                                                                                      AAD37257;
                                      2101
                                                                                                                 2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xiao X;
                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                     ď
                 ત્
                                      2 8 2
                                                                                           ą.
                                                                                                                 ≵ Զ
                                                                                                                                                      ⋩
                                                                                                                                                                          હ
                                                                                                                                                                                           ≿
                                                                                                                                                                                                                                  ⋩
                                                                                                                                                                                                                                                   ď
    ⋩
```

```
2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2016
                                                                          1416
                                                                                                                           1476
                                                                                                                                                                              1536
                                                                                                                                                                                                                       1656
                                                                                                                                                                                                                                                                                                                                    1716
                                                                                                                                                                                                                                                                                                                                                                                                                                        1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                    180
                                                                                                    120
                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2017 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2077 TAGCATGGAAAAACAAAGGAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTCTIGGACCTGATCTIGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTICA
                                                                                                                                                                                                                                                                                   garcacecrcaercraecacaeeearareaeaeaacrrcrrccccraaeccrcearrcaa
                                                                                                                                                                                                                                                                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                TCCTTCACAGCCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                        reaagraaaccregaccgrrarcaaacagcrrragaagaagaarrrarceregccrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGGACACAGAGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1837 İGCİGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGITICATACICAIGAGGGIACAIGAIGGAITIIGACAGCCCAICAGGGCCGGGIIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAACAAGAACAAGGAAAAA
                                                                                                                                                                                                       ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                           GATCACGGTCAGTTAGGGATATGAGAGAGTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                             GAGCTATGCCTACACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                    gagerrangeeracacadeergerrangteaccacerergaceeracacdadageecarr
                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAATATTATCGTGGCTTCTTTC
                                                                                                                AGTITIGCCTCAACAAGTGAGCATIGAAGCCATCCAGGAAGTGGAAATGTTGCCAAAGGCC
                                                                                                                                                                              1477 AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                       1357 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                 1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                    TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                          Gaps
                        ő
DB 6; Length 4825;
                          Indels
                          ö
100.0%; Score 2401;
100.0%; Pred. No. 0;
                          0; Mismatches
                Best Local Similarity 100.
Matches 2401; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                 1417
                                                                                                                                                                                                            181
                                                                                                                                                                                                                                     1537
                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                       1597
                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                          1657
                                                                                                                                                                                                                                                                                                                                                                                           1717
                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                             1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                  361
    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                        요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                           셤
                                                                                                     જે
                                                                                                                           쉱
                                                                                                                                                          ò
                                                                                                                                                                             d
                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                 ò
                                                       ò
```

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The

Example 1; Page 61-62; 71pp; English

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.

g

g &

원 상 원

à

8 8 8

g

à

à

8 8 8

ò

 & g &

95 95 96 8 8

상 원

Qy 1981 TCTGAAAGAAACGTGAACCACGTCAATGCCCCGCTTGCTCGCCGCTTACCACTTTGGGCT 2040 Db 3337 TCTGAAAGAACCTGAACCACGTCAATGCTCGCCAGCTTACCACTTTGGGCT 3396 Qy 2041 TCAGCTCTACCGTATAACCTCAGCACTGCAACACCACAACACCACATTTGGACT 2100 Db 3397 TCAGCTCTCACGTATAACCTCAGCACTCAGAACACCAGAACACCAGAACTTTGGTCC 2160 Db 3457 GAAGTGGCCGTCAAGAACACCAGAGACCCAGAACACCAGAACTTTGGTCC 2161 Db 3457 GAAGTGGCCGTCAAGACCAGACTCAGAGACCATGAACACCAGAACTTTTGGTCC 220 Qy 2161 AGCATCTCAGCACTTTCTTCCAGGCTCATGAACACCAGAGACTTTGGTCC 3516 Qy 2161 AGCATCTCAGCACTTTTTCCACGTCTCACAGGACCCAGGAACACAGGAACTTTGGTCC 3576 AAACAAAAGTGCCCTACTTTTTCCACGTCTCCAGGACCCTCAGAAGACCCAGGAACTTCTGGCC 220 Db 3577 AAACAAAAGTGCCCTACTTTTTCCACGTCCAGAACTTGCTGGAACTTCTGGCCCCAA 3536 Qy 2281 AAACAAAAGTGCCCTACTTATACCACGAGACCTGAATAATGCAGACTTCTGAGACTTTTAGGCTTTTAGG 2401 Db 3697 GACTGCCTTACCAGACTTTTAGCTGCACTGAATAATGCAGACTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTTAGGCTTTTTAGGCTTTTTTAGGCTTTTTAGGCTTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTTTTTAGGCTT	RESULT 3 AAD37263 ID AAD37263 XX AAD37263, XX AAD37263, XX AAD37263, XX ABD37263, XX AGENC-associated virus (AAV) vector plasmid, AAV-CMV-delta3849. XX AGENC-associated virus (AAV) vector plasmid, AAV-CMV-delta3849. XX XX XX Muman; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; XX XX XX Homo sapiens CS Cytomegalovirus OS Chimeric. XX XX XX XX XX XX XX XX XX XX XX XX XX

The present invention relates to an isolated nuclectide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) element. The dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct contaning human dystrophin minigenes, a cytomegalovirus (CMV) promoter and a small polyA signal sequence 8×33333333333333

Sequence 4848 BP; 1405 A; 1144 C; 1180 G; 1119 T; 0 U; 0 Other;

ö Indels DB 6; . 0 Score 2401; D Fred. No. 0; 0; Mismatches Query Match
Best Local Similarity 100.0%;
Matches 2401; Conservative 0

음

셤

ਨੇ

g

ਨੇ

g

줐

9

3

원

à

ď

ਨ੍ਹੇ 유 ጽ 9 ሯ ď ⋩ 9 \gtrsim ď ⋩ ď

줐

1499 AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 1559 ACCTARAGIGACIARAGARGACATTITCAGITACATCATCARATGCACTATTCTCAACA 1619 1740 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1799 1800 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATGGTGGCTTCTTTC 1859 2039 360 540 600 420 9 1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACCATCTTCCA TGTTGATACCACCTATCCAGATAAGAAGTCCCATCTTAATGTACATCACATCACTCTTCCA 181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATGATAAATGCACTATTCTCAACA GATCACGGTCAGTCTAGCACAGGGATATGAGAACTTCTTCCCCTAAGCCTCGATTCAA GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTTACACGGAGCCCATT .680 GAGCTATGCCTACACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGCACCCATT TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA TECTERAGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAG CCAGITICATACTCATGAGGGGTACATGATTGACAGCCCCATCAGGGCCGGGTTGG .920 ccagnincaracicardadedracardardardaridaridadadccarcadedcedecederies TAATATICTACAATIGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAAGATGAAGA .980 TAATATICTACAATIGGGAAGTAAGCIGATIGGAACAGGAAAATIATCAGAAGAIGAAGA 2040 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC AACTGAAGTACAAGAGCAGATGAATCTCCTAAAATTCAAGATGGGAATGCCTCAGGGTAGC TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1380 1440 1560 61 1500 1860 601 121 241 301 361 421 481 541 661 721

840

2100 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT

781

1380 1620 2759 841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 2220 GCCTCTIGGACCTGATCTIGAAGACCTAAAACGCCAAGTACAACAACAACAACAAGGTGCTICA 2340 TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAAGGTATTGGG AGATCGATGGCCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAC TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGA 2460 TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA 2520 AGCTGAAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAAGGAAAGGCTCCTAGAAGA 2640 TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCTGAGATCCTGGGA 2700 AGGITCCGAIGAIGCAGICCIGITACAAAGACGITIGGAIAACAIGAACTICAAGIGGAG TGAACTICGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG GAAGCGTCTGCACTTTCTCTCTGCAGGAACTTCTGGTGTGGCTACAGGTGAAAAGATGATGA 2400 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAC CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGAGCTCCCAAGGTGAAATTGAAGC TGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG GAAGCGTCTGCACCTTTCTCTCCAGGAACTTCTGGTGTGGGCTACAGCTGAAAGATGATGA ACATAGGGCCTTCAAGAGGGAATTGAAACTAAAGAACCTGTAATCATGAGTACTCTTGA GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTCTACCAGGA GCCCAGAGAGCTGCCTCCTGAGGAGAGCCCCAGAATGTCACTCGGCTTCTACGAAAGCA Gecticadedectical and the control of AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA ATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAGCGATGT GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCT ATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT **ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA** GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA GCCCAGAGAGCTGCCTCCTGAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 1021 1081 1201 2580 1261 1321 1381 2760 1441 2820 1501 2880 2940 1621 3060 3120 1801 901 961 1561 3000 1681 1861 1741 음 ð ద g g g 셤 8 8 ઠે ò ઠે ઠે 셤 ò S g ठ à 원 à g ò d ò 음 ò 음 ò 요 8 8 9 6 ò

```
dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2552 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                             71pp; English
                                                                                                                                                                                                            small polyA signal sequence
                                             Example 1; Page 70-71;
                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                               2160
                                                                                                                                                                                     3539
                                                                                                                                                                                                            2220
                                                                                                                                                                                                                                                                                                                                                   2400
                                                                                                                                                                                                                                 3599
                                                                                                                                                                                                                                                                                                                    TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACACAGATGGAAGCTTCT 3479
                                                                                                                                                                                                                                                                              3600 AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA 3659
                                                                                                                                                                                                                                                                                                     AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG 2340
  3240 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGGGATCTCCT 3299
                                                                                                                                                                                                                                                                                                                                                                        GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 3779
                                          CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                 AGCATCTCAGCACTTTCTTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                   GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTTGGATCTCTTGAGCCTGTC
                                                                      TCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT
                                                                                          rereaagagaacercaccacercaargacerrecreeccacerraceacrrregecar
                                                                                                                                                              GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                         AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA
                       CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                            AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               muscular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human, dystrophin minigene, muscular; gene therapy, utrophin; e
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adeno-associated virus (AAV) vector plasmid, AAV-E-CMV-3849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Becker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New dystrophin minigene for treating Duchenne or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAD37264 standard; DNA; 5060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-APR-2000; 2000US-020077P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cytomegalovirus.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                               A 2401
                                                                                                                                                                                                                                                                                                                                                                                                                       A 3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-NOV-2001
                                                                                                                                                                                                                                                                                                     2281
                        1921
                                               3300
                                                                     1981
                                                                                           3360
                                                                                                                                        3420
                                                                                                                                                              2101
                                                                                                                                                                                     3480
                                                                                                                                                                                                            2161
                                                                                                                                                                                                                                 3540
                                                                                                                                                                                                                                                         2221
                                                                                                                                                                                                                                                                                                                                                                          3720
                                                                                                                                                                                                                                                                                                                                                                                                2401
                                                                                                                  2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD37264;
                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                    ò
                                                                                         엄
                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                \delta
                                                                                                                                       g
                                                                                                                                                             à
                                                                                                                                                                                  셤
                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                à
```

```
1951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2191
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specitin gene, Hi and Hy domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprissing dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscular containing human dystrophin minigenes, a muscular containing human dystrophin minigenes, a muscular containing human dystrophin minigenes, a muscular containing human dystrophin minigenes, a muscular containing human dystrophin minigenes, and a mascular containing human dystrophin minigenes and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1652 IGTIGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1712 AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1772 ACCIMANGIGACIMANGANGANCATITITICAGITACATCANCANGANIGCACTATITICANGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 GAICACGGICAGICIAGCACAGGGAIAIGAGAGACTICIICCCCIAAGCCICGAIICAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .832 GAICACGGICAGICTAGCACAGGGATAIGAGAACTICTITCTICCCCTAAGCCICGAIICAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1892 GAGCTATGCCTACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1952 TCCTTCACACTTTGGAAGCTCCTGAAGACACAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            012 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2072 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2132 CCAGTTTCATACTCATGAGGGGTACATGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            192 TAATATTCTACAATIGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661 BACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGITITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 AGTITIGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seguence 5060 BP; 1449 A; 1217 C; 1234 G; 1160 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6; Length 5060;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 100.0%; Pred. No. 0,
Matches 2401; Conservative 0, Mismatches
```

1801 AAMANTGANGGANGCCTTGAAGACTCAAGAAGCTCAAGAGGCCGCGGATGGGA 1800 1801 1801 1801 1801 1801 1802	RESULT 5 AAD37234 standard; DNA; 3999 BP. XX AC AAD37234; XX DT 21-AUG-2002 (first entry) XX E Human dystrophin minigene delta3990. XX Muman; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; XX XX Human; dystrophy; ds. XX XX XX XX XX XX XX XX XX XX XX XX XX
131 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGAACTCCAGAATCAGAAACT 180 1	1381 TGAACTTCCCGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 1440 1441

WPI; 2002-049342/06.

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.

Example 1; Page 46-47; 71pp; English.

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated vitus (AAV) comprising dystrophin minigene operably linked to an expression control element, in a recombinant adeno-associated vitus or retrovirus is control element, in a recombinant adeno-associated vitus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy and celeals of containing nucleotides 1-1668 (N-terminus, hinge H1 and rods R1 and R2), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)

Sequence 3999 BP; 1223 A; 907 C; 933 G; 936 T; 0 U; 0 Other;

8 8

\$ B \$

\$ B

ద

6 8 6 8 6 8 6 8 6 8 6

à

1019 1079 1139 1199 360 420 480 540 900 9 240 300 899 959 629 120 719 180 779 839 960 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG 600 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA 660 retrearaccacerarecaearaagaaerecarerraareracarearerererea AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 780 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAATGCACTATTCTCAACA 840 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TOCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1020 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1080 TGCTGAGGACACATTGCAAGGACACAAGAGATTTCTAATGATGTGGAAGAGGAGAAAGA 1140 CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGATGA 1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTTCCA ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAATGCACTATTCTCAACA GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACGAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 0; Indels 141; Gaps DB 6; Length 3999; Query Match Best Local Similarity 94.5%; Pred. No. 0; Matches 2401; Conservative 0; Mismatches 541 61 121 181 241 301 900 361 421 481 601

ò 8	661	AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 720
ò	21	GCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 780
qu	1320	m
ò	781	aaaaacagaagaagaacaaggaaaatggaggaaga 840
đ	1380	gaatgactggctaacaaaaacagaagaagaacaaggaaaatggaggaaga 14
à	841	AACAACATAAGGTGCTTCA 900
셤	1440	ccicitiggaccigaictigaagacciaaaacgccaagiacaacaacataaggigctica 14
ठे त	106	GTAGT 960
3 8	i i	CARTON ANTON
ž f		
ò	1021	GGACAGAAGACCGCTGGGTTCTTTTACAAGAC 107.
đ	1620	egricititacaadacca 16
ò	1079	101
qq	1680	TACTCAGACTGTTACT
ò	1079	107
qq	1740	ACTAGAAATGCCATCTTC 179
ò	1079	ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAA 1119
đ	1800	ccccrddaccrddaaaa 185
ò	1120	IGCCIGGCITACAGAAGCIGAAACAACIGCCAAIGTCCIACAGGAIGCIACCCG 117
qq	1860	SCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCG 191
λõ	1180	TAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGA 1239
QQ	1920	ccaaggagtaaagagctgatgaaacaatggcaag
ζ	1240	ACACAGATGITIATCACAACCTGGATGAAAACAGCCA 12
qq	1980	CTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAA
δ	ō	STICCGAIGAIGCAGICCIGITACAAAGACGITIGGA 1
අු	2040	:CTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGA 209
ò	1360	CTCAACATTAGGTCCCATTT 141
qq	2100	TAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT 21
λō	ñ	GGRAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG 147
ପ୍ର	2160	GGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG 221
ò	ĕ	GCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC 153
셤	2220	GCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC 227
ò	4	AGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACC 1
Ор	2280	AGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACC 233
ò	1600	TGTA

σ

```
1959
                                                                                                                                                                                                                                                                                                                                                                                                         2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2259
                                                                                                                                                                                                                                                               AGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTG 2639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGCAGCCTTTGGAAGG 2399
                                                                                                                                                                                                          GCACTCCGCTGACTGGCAGAGAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCA 2579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCACTCTGGAAGACCT 2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAAC 2999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTG 2379
                                                                     ACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGT
                                                                                                                CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCT
                                                                                                                                             2460 cacricescricraceaaascaescreaceaescraaracreaeresesaaaaarreaacer
                                                                                                                                                                          GCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCA
                                                                                                                                                                                                                                           AGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTG
                                                                                                                                                                                                                                                                                                          GCAGCCCGTGGGCGATCTCTCTCTCTCTCTCCAAGATCACCTCGAGAAAGTCAAGGC
                                                                                                                                                                                                                                                                                                                              GCAGCCCGTGGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                       ACTICGAGGAGAAATIGCGCCTCTGAAAGAGAACGTGAGGCCACGTCAAIGACCTTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                       2700 ACTICGAGGAGAATIGCGCCTCTGAAAGAGAACGIGAGCCACGICAATGACCTIGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTTGCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGCTGACCTGAATAA
                                               ACTAGAGAAACTCTACCAGGGCCCAGAGGCTGCCTCCTGAGGAGAGACCCCAGAATGT
CITGGATCTCTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTGGATCTCTTGAGCCTGTCA 3141
                                                                                2400
                                                                                                                                                                                                            2520
                  2340
                                                   1660
                                                                                                                1720
                                                                                                                                                                             1780
                                                                                                                                                                                                                                            1840
                                                                                                                                                                                                                                                                           2580
                                                                                                                                                                                                                                                                                                          1900
                                                                                                                                                                                                                                                                                                                                        2640
                                                                                                                                                                                                                                                                                                                                                                         1960
                                                                                                                                                                                                                                                                                                                                                                                                                                        2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3120
                  유
                                                                            셤
                                                                                                              ò
                                                 ઠે
                                                                                                                                         g
                                                                                                                                                                            à
                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                      ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ਨ੍ਹੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ጵ
```

```
gene therapy; utrophin; spectrin; muscular dystrophy; DMD; BMD;
                                                                 Adeno-associated virus vector plasmid, AAV-MCK-delta3990
                                                                                      Human; dystrophin minigene; muscular; adeno-associated virus; AAV; Duchenne Becker muscular dystrophy; ds.
BP
AAD37256 standard; DNA; 4966
                                           (first entry)
                                           21-AUG-2002
                     AAD37256;
```

Homo sapiens. Unidentified. Chimeric.

1476 1596 1716 120 New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specitin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle 360 420 The present invention relates to an isolated nucleotide sequence encoding 9 1357 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA 1477 Adriringcorchadaadadadarraaadcoarcoadoaagradaaargrigcoaagdo acctraracterctraracarcattricactracatcarcaracatecrearca GATCACGGTCAGCCTAGCACAGGGATATGAGAAACTTCTTCCCCTAAGCCTCGATTCAA GATCACGGTCAGTCTAGCACAGGGATATGAGAGAAACTTCTTCCCCTAAGCCTCGATTCAA TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG TGAAGTAAACCTGGACCGTTATCAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC ACCTAAAGTGACTAAAGAAGATTTTCAGTTACATCATCAAAATGCACTATTCTCAACA GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGCGCCCATT TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC Gaps creatine kinase (MCK) promoter and a small polyA signal sequence Sequence 4966 BP; 1403 A; 1216 C; 1232 G; 1115 T; 0 U; 0 Other; 0; Indels 141; Query Match 93.7%; Score 2250; DB 6; Length 4966; Best Local Similarity 94.5%; Pred. No. 0; Matches 2401; Conservative 0; Mismatches 0; Indels 141 Example 1; Page 59-60; 71pp; English 28-APR-2000; 2000US-0200777P. 27-APR-2001; 2001WO-US013677. WPI; 2002-049342/06 WO200183695-A2 (XIAO/) XIAO 08-NOV-2001 121 181 1537 1597 301 1657 61 241 361 1717 421 엄 ਨੇ ઠે 셤 ò 음 ò d ò g 8 g à

1.89 COLORGICAL CONTROLL C	AC AAD37262;
TGCTChGGACCCTTCChAGCACACACACACACACACACACACACACACACACAC	1420 GGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG 1479

8 8 8

90 A0

```
Xiao X;
```

```
1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprisaing dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (DMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a cytomegalovirus (CMV) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                          Human, dystrophin minigene; muscular; gene therapy, utrophin, spectrin, adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1381 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACCATCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1441 ferrearaccaccrarccagaraagaagrccarcrraargracarcaccaccarcrrcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTAAAGTGACTAAAGAAGATTTTCAGTTACATCAAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ACATGCATTCAACATCGCCAGATATCAATTAGGCCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4990 BP; 1439 A; 1185 C; 1208 G; 1158 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels 141;
                                                           Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 6; Length 4990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Score 2250; DB
; Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 1; Page 67-68; 71pp; English
                                                                                                                                                                                             Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-APR-2000; 2000US-020077P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 94.5%;
Matches 2401; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                           Cytomegalovirus.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                          WO200183695-A2
21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
```

አ વ્ ⋩ ð ⋩ á ≿ ă ⋩

1860 1920 1980 2040 2100 2160 2220 2280 2340 2700 480 540 600 9 720 780 840 960 900 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT .681 GAGCTATGCCTACACACACGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1741 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1801 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1861 TGCTGAGGACACATTGCAAGCACACAAGGAGATTTCTAATGATGATGAGAAGTGGAGAAGA 1921 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1981 TARTATICTACARTIGGGAAGTAAGCIGATIGGAACAGGAAAATTATCAGAAGAIGAAGA AACTGAAGTACAAGAGCAGATGAATTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 2101 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT GCCTCTTGGACCTGATCTTGAAGACCTAAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 2401 AGATGGATGGGAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTACAAGACCA TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACACAGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA CCAGTITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG GAAAGAGTTGAATGACTGGCTAACAAAACAGAAAAAGAAAAAGGAAAAATGGAGGAAGA TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1021 AGATCGATGGGCAAACATCTGTAGATGGACAGAAAGACGGCTGGGTTCTTTTACAAGAC--2461 GCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCT GTTTCTTGCCTGGCTTACAGAAGCTGAACCAACCTGCCAATGTCCTACAGGATGCTACCCG TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC GGTGACACACCACTGTGGTTACTAAGGAAACTGCCATCTCCAAACTAGAAATGCCATCTTC -----ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAA 2581 CTTGATGTTGGAGGTACCTACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAA GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA GTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCG TAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAAGAGCTGATGAAACAATGGCAAGA TAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGA 421 481 661 2041 721 2161 2221 2341 2521 2641 1180 361 541 2281 1079 301 601 781 841 901 196 1079 1079 원 a 음 성 ઠે 8 ઠે g ò 쉱 g à g. ò g 임 ઠ ઠે ò 셤 δ 셤 ò 5 C ò g à g à g ò 유 ठे a ò

셤

ò

셤

 $\dot{\delta}$

d

8 8

셤

상염

ò

8 6 8 6

6 6 6 6 6

ò

```
3841 IGTCAGATTCTCAGCTTATAGACTGCCATGAAACTCCCGAAGACTGCAGAAGGCCCTTTG 3900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta4173 containing nuclectides 1-1992 (N-terminus, hinge H1 and rods R1, R2 and R3), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                     Human, dystrophin minigene, muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels 324;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 88.1%; Pred. No. 0;
Matches 2401; Conservative 0; Mismatches 0; Indels 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4182 BP; 1309 A; 927 C; 970 G; 976 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 43-44; 71pp; English.
                                                                 2380 CTIGGATCTCTTGAGCCTGTCA 2401
                                                                                               3901 CTTGGATCTCTTGAGCCTGTCA 3922
                                                                                                                                                                                                                                                                                                                                  Human dystrophin minigene delta4173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                               AAD37230 standard; DNA; 4182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                               entry)
                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                             21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-NOV-2001
                                                                                                                                                                                                                                                    AAD37230;
                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                               ठ
                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                    1479
                                                                                                                                                                                                                                                                                                                                      1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2199
                                                                                                                                                                                                               2940
                                                                                                                                                                                                                                                                                             3000
                                                                                                                                                                                                                                                                                                                                                                                                                     1599
                                                                                                                                                                                                                                                                                                                                                                                                                                                            3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2259
                                                                                                                                                                                                                                                                                                                                                                              3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTG 2379
                                  2761 CCTCCAAGGTGAAATTGAAGCTCACACAGTGTTTATCACAACCTGGATGAAAAAACAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTITCGAGGAGAAATTGCGCCTCTGAAAGAAGAACGTGAGCCACGTCAATGACCTTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTIGCIGGGACCAICCCAAAATGACAGAGCICTACCAGICTITAGCIGACCIGAAIAA
                                                                                                                                                                                                        TAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT
                                                                                                                                                                                                                                                                                             GGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG
                                                                                                                                                                                                                                                                                                                                                                   GCTACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTICAGAAGCAGAACGAIGIACAIAGGGCCTICAAGAGGGAAITGAAAACTAAAGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3361 AGAGGCCACGGATGAGCTGGACCTCAAGCTGCCCAAGCTGAGGTGATCAAGGGATCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTICGAGGAGAAAITGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   credenandadeccarcrescenancanagresceracrarrareaccaseacresans
                                                                                                                     APABATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGA
                                                                                                                                                                       TAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT
                                                                                                                                                                                                                                                      GGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG
                                                                                                                                                                                                                                                                                                                                      GCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                     1540 AGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         geagecegregecearcrecrearreacreterecaagareaccreagaagareaage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3541 ccadcriaccacriricadcarricacricicaccarraaccricaccacricadaagaccr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCCACCTGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAA
             CCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCA
                                                                                         AAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGA
             1240
                                                                                                                                2821
                                                                                                                                                                          1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2140
                                                                                           1300
                                                                                                                                                                                                               2881
                                                                                                                                                                                                                                                        1420
                                                                                                                                                                                                                                                                                               2941
                                                                                                                                                                                                                                                                                                                                         1480
                                                                                                                                                                                                                                                                                                                                                                              3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                              3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2260
```

임

8 8 8

ර් සි

. a

장염

8

8 8

심

ò

STIGCCAAGGCC	4 &	1800 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAAA
ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGGACTATTCTCAACA 240 		1860 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1919
GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA 300	AD Q	1920 CCAGAAGACGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1979
CCATT	Sy Cy	1079ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 1116
AGCITICACAGACACACAGAGACACACACACAGACACAGACACAGAGACACAGA 599 CCTICACAGACATITIGGAAGCICCIGAAGACAAGTACATITIGGCAGITICATIGGAGAG 420 CCTICACAGCATITIGAAAGACAAGACAAGACAATITIGATIGAAAGAAGACAGATACATITIGATIGAAAGAAGACAAGAAAAGAA	QY	1117 AAAGTITCTTGCCTGGCTIACAGAAGCTGAAACTGCCAATGTCCTACAGGATGCTAC 1176
	Qy	1177 CCGTAAGGAAGGCTCCTAGAAGACTCCAAGGGGTAAAAGAGCTGATGAAACAATGGCA 1236
ARGIARACCIGGRACCGITAICAAACAGCIIIIRGAAGAAGIAIIRICGIGGCIICLIIC 1979 CTGAGGACACATTGCAAGCACAAGGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA 540 FIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Qy Db	1237 AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG 1296
GITGG	. Qy	1297 CCAAAAARCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT 1356
	Q. du	1357 GGATAACATGAACTTCAAGTGAAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1416 2280 GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCA 2339
TAAIRII CIACAAIIGGGAAGIAAGCIGAIIGGAACAGGAAAAITAICAGAAGAIGAAGA 1259 AACTGAAGTACAAGAGCAGATGAATCTCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 720	OY Db	1417 TITGGAAGCCAGITCTGACCAGTGGAAGCGICTGCACCTITCTCTGCAGGAACTICTGGI 1476
	Qy QQ	1477 GTGGCTACAGCTGAAAGATGATTAAGCCGGCAGCCCCTATTGGAGGCGACTTTCC 1536
SAAGA	& A	1537 AGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATGAAAACTAAAGA 1596
	Qy Db	1597 ACCTGTAATCATGAGTACTTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGA 1656
GTAGT	QQ Db	1657 AGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAA 1716
	QY	1717 TGTCACTCGGCTTCTACGAAAGCAGGCTGAGGGGGAATCAATACTGAGTGGGGAAAAATTGAA 1776
GAC	λο q _Q	1777 CCTGCACTCCGCTGACAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACT 1836
3ACAT	oy Pb	1837 TCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGGCCCAAGCTGAGGTGATCAAGGGATC 1896
CAAATGGCAACGICTIACIGAAGAACAGTGCCTTTTTAGTGCCTTTCAGA 1739	oy du	1897 CTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAA 1956 2820 CTGGCAAGCCCGTGGGCGATCTCCTATTGACTCTCTCCAAGATCACCTCGAGAAACTCAA 2879
AAAAGAAGATGCAGTGAACAAGATTCACACCAACTGGCTTTAAAGATCAAAATGAAATGTT 1799	· &	GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC

Mon Apr

```
301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     심
88888888888888
                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                        2316
                                                                                                                                                                                                                                                                                                                                                                                                                                    2376
                                                                                                                   2136
                                                                                                                                                                                               2196
                                                                                                                                                                                                                                    3119
                                                                                                                                                                                                                                                                            2256
                                                                                                                                                                                                                                                                                                                                                                                              3239
                                                                                                                                                                                                                                                                                                      rangicadaricicaderranagacidecardaaacreegaagacideaaaggeer 3299
                                                                                                                                                       cereaacacacadarddaadcrirerecadadredeceredaddaddaddaddaddaddadda 3059
  GGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGC 2939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene for treating Duchenne or Becker muscular
an N-terminal domain or modified N-terminal domain,
H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
Becker muscular dystrophy; ds.
                                                                                                                   CCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCA
                                                                                                                                                                                                                                       realsectables de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruction de la reconstruct
                                                                                                                                                                                                                                                                            TCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCA
                                                                                                                                                                                                                                                                                                                                                          AACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAA
                                                                                                                                                                                                                                                                                                                                                                                            aacaactrocrossaccarcccaaaarsacassascrcraccasrcrrrascrsaccrsaa
                                       TCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGGACACTGTGGAAGA
                                                          TAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Adeno-associated virus vector plasmid, AAV-MCK-delta4173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIGCTIGGAICTCTTGAGCCTGTCA 3324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TIGCTIGGAICTCTIGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        вР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD37255 standard; DNA; 5149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-APR-2000; 2000US-020077P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dystrophin minigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          comprises
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          dystrophy com
rod repeats,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens,
Unidentified,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-NOV-2001
                                          2017
                                                                               2940
                                                                                                                   2077
                                                                                                                                                           3000
                                                                                                                                                                                                                                                                                                                  3120
                                                                                                                                                                                                                                                                                                                                                          2257
                                                                                                                                                                                                                                                                                                                                                                                                3180
                                                                                                                                                                                                                                                                                                                                                                                                                                      2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chimeric.
    2880
                                                                                                                                                                                                 2137
                                                                                                                                                                                                                                       3060
                                                                                                                                                                                                                                                                              2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAD37255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                             셤
                                                                                                                   ò
                                                                                                                                                       a
                                       ò
                                                                                                                                                                                                 à
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, $\rm H1$ and $\rm H4$

Example 1; Page 57-59; 71pp; English

```
1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1597 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1837 IGCTGAGGACACATTGCAAGCACAAGGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1357 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCTGCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1417 IGITGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1477 agriringecreaacaagraagearigaageericeaegaagiggaaargrigeeaaggee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 ACCTABAGTGACTABAGAAGAACATTTTCAGTTACATCATCAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1537 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 GATCACGGTCAGGCACACAGGGATATGAGAGAGACTTCTTCCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1657 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1717 recrreacadearringaagereergaagacaacaagrearringeagricarrigargaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACACAGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGITICATACICATGAGGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1897 ccadrircaracicardaddddaracardadarddaringacadcccarcaggccggcrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2137 GAAAGAGTTGAATGACTGCCTAACAAAACAGAAGAAGAACAAGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 AGITITIGCCTCAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAATGTIGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                     Sequence 5149 BP; 1489 A; 1236 C; 1269 G; 1155 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels 324;
                                                                                                                                                                                                                                                                                                                                                                                                    Length 5149;
                                                                                                                                                                                                                                                                                                                                                                                                       DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
86.1%; Score 2067; D
Best Local Similarity 88.1%; Pred. No. 0;
Matches 2401; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

1277 ACCTOTAATCATGAGAACTCTCAGAGACTGCTAGAGAGAGAGCCCTTTGGA 3136 1397 AGGACTGAGAAACTCTCAGGAGCCCAGAGAGCTGCTCTGAGAGAGA	RESULT 10 ABK81999 ID ABK81999 standard; DNA; 5462 BP. XX AC ABK81999; XX DT 13-AUG-2002 (first entry) XX DT 13-AUG-2002 (first entry) XX XX XX XX XX XX XX Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease; XX XX XX Mini-dystrophin, ds. XX XX XX XX XX XX XX XX XX XX XX XX XX
	1357 GGATAACATGAACTTCAAGTGGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCA 116

1398

1518

780

720

1558

840

```
GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACACACAGAAGATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGITICATACICATGAGGGGIACATGATGGATITGACAGCCCATCAGGGCCGGGITGG
                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -CATAGATTACTGCAACAGTTCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u> agengaaacaacngecaangnecracagangeracecgraaggaaaggerecragaaga</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAGATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTTGA
                                                     TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                            AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                       GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                            CACTATTGGAGCCTCTCCTACTCAGACTGTTACTCTGGTGACACAAACCTGTGGTTACTAA
                                                                                                                                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1081 TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAAGGCTCCTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCCAAGGGAGTAAAAAGAGCTGATGAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCACACAGATGTTTATCACAACCTGGATGAAAAACAGCCAAAAAATCCTGAGATCCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAAATGGATCTCCAGAAACT
                                                                                                                                                                                                                                                              841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                    egaaacreccarcrecaaacragaaareccarcrrrcrreargregae-----
                                                                                                                                                                           raccardcaaaacaaacaarrracargcrccrggacrg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2209
                                                                                                                                                                                                                                                                                                                                                                                                                                               1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1909
    1339
                                                           1399
                                                                                       661
                                                                                                                    1459
                                                                                                                                                                            1519
                                                                                                                                                                                                                                      1559
                                                                                                                                                                                                                                                                                               1561
                                                                                                                                                                                                                                                                                                                                                         1621
                                                                                                                                                                                                                                                                                                                                                                                                                 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1201
                                                                                                                                                721
                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                       961
                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ठे ने ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                     8
                                                  용
                                                                                   8
                                                                                                          g
                                                                                                                                       δ
                                                                                                                                                                        g
                                                                                                                                                                                               8
                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                    8 8
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                         장염
                                                                                                                                                                                                                                                                                                                                                                                                                                         $ 8 $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     978
                                                                                                                                                                                                                                                      The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domain, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition (for treatment of muscle disease, e.g. Duchenne's muscular dystrophy (DMD). This sequence represents a mini-dystrophin sequence of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGITICATACICATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACAGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rgaagraaaccriggaccgrrarcaaacagcrrragaagaagrarrarcgrggcrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGITITIGCCICAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAAIGTIGCCAAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATCACGGTCAGCTCAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCTATGCCTACACACACGCTTCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGGAAGAGA
                                                                                                                                                                            A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 5462 BP; 1668 A; 1225 C; 1212 G; 1357 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               6; Length 5462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            76.6%; Score 1839.4; DB 88.1%; Pred. No. 0; atrive 0; Mismatches 76
                                                                                                                                                                                                                                         Disclosure; Fig 14; 145pp; English
                                04-OCT-2001; 2001WO-US031126
                                                              06-OCT-2000; 2000US-0238848P
                                                                                                                       S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 88.1
nes 2115; Conservative
                                                                                                                     Chamberlain JS, Harper
                                                                                           UNIV MICHIGAN
                                                                                                                                                   WPI; 2002-435334/46
      11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sy
Bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ፟
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

1669

1620

900

960

1669

1080

1200 1788 1260 1848 1320 1320

1728

2148

1620

1560

1968

1440

2028

1500

2208

2100 2748 2340 2929 GACTGCCATGAAACTCCGAAGAAGACTGCAGAAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2988 2269 GCCCAGAGAGAGCTGCCTCCTGAGGAGAGAGAGAGAGAATGTCACTCGGCTTCTACGAAAGCA 2449 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGGTGGGCGATCTCCT TCTGAAAGAGCACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT TCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2689 GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC AGCATCTCAGGACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA AAACAAAGTGCCCTATATAACAACCAGGAGACTCAAACAACTTGCTGGGACCATCCCAA 2869 AATGACAGAGCTCTACCAGTCTTTAGCTGAACAGATAATGTCAGATTCTCAGCTTATAG GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTTGAGCCTGTC GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG <u>AAAAATGAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA</u> CATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 2509 CATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG GCCCAGAGAGCTGCCTCCTGAGGAGAGGCCCAGAATGTCACTCGGCTTCTACGAAAGCA GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG 2401 A 2401 -∢ 2629 2161 2221 2989 1981 2041 2749 2281 1681 1741 2329 1801 2389 1861 1921 2101 8 ጵ ዳ ል 8 ď q g ą A 원 ⋩ ရ ⋩ ď 汝 쇴 2 8 2 \gtrsim ጵ ਨ੍ਹੇ ਨੋ ⋩

AAD37238 standard; RESULT 11 AAD37238 BXBXBX&&&&XBXBXBXBXBXB

DNA; 3531

(first entry) 21-AUG-2002

AAD37238

Human dystrophin minigene delta3531

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.

08-NOV-2001

2001WO-US013677

28-APR-2000; 2000US-0200777P

(XIAO/) XIAO

Xiao X;

WPI; 2002-049342/06

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1; Page 50-51; 71pp; English

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a specitin gene, Hi and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta3531 containing nucleotides 1-1341 (N-terminus, hinge H1 and rod R1), (809-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)

Sequence 3531 BP; 1071 A; 809 C; 824 G; 827 T; 0 U; 0 Other;

180 240 629 120 719 779 839 9 720 AGTITIGCCICAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAAIGIIGCCAAGGCC ACCTABAGTGACTABAGGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA AGTITITGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCAAATGCACTATTCTCAACA ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA 0; Indels 327; Query Match 72.3%; Score 1737; DB 6; Length 3531; Best Local Similarity 86.4%; Pred. No. 0; Matches 2074; Conservative 0; Mismatches 0; Indels 327. 600 9 780 н 121 61 181 셤 g & g 8 g ò à

360 GATCACGGTCAGTCTAGCACAGGGATATGAGAGACTTCTTCCCCTAAGCCTCGATTCAA 300 840 GATCACGÉTCAGTCTAGCACAGGGATATGAGAACTTCTTCCCCTAAGCCTCGATTCAA 241 ò 요 ò

959 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 900 GAGCTATGCCTACACACACGCTCTTATGTCACCACCTCTGACCCTACACGCAGCCCATT 301 D 8

> В ઠે g ò

1079 TGAAGTAAACCTGGACCGTTATCAACAGCTTTTAGAAGAAGTATTATCGTGGCTTCTTTC TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1020 481

TGCTGAGGACACATTGCAAGCACACAAGGAGACATTTCTAATGATGTGGAAGTGGTGAAAGA

09 1621 GACTGTACGAATATTTCTGACAGAGCAGCTTTGGAAGGAA	1921 CATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAAAATTGCGCC 2193 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCCCCTGAGAAATTGCGCCCCTGAAAGAGAAAATTGCGCCCCTGAAAGAGAAAATTGCGCCCCTGAAAGAGAAAAAGAGAAAATGCCTTGCCCCCCTTACCACTTTGGGCATTCGAAAGAGAAAGAGAAACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATCCTTGCTCTCTCGCCAGCTTACCACTTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGCATTTGGGAAGCTTTGGGAAGCTTTGTGTTGTTTTGGGAAGATGGGAAGCTTCTTTGGAAACGTCAGGAAGCTTGTTGTTTGT	21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	553 AATGACAGAGCTCTACCAGTCTTTAGCTGAACTGAATAATGTCAGATTCTCAGCTTTATAGCTGACCTGAACTGCAGATTCTCAGCTTTAGCTGAACTGCAGAAGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2	XX XX XX XX XX 21-AUG-2002 (first entry) DT XX XX XX XX Adeno-associated virus vector plasmid, AAV-MCK-3531. XX XX XX Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; XX Adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; XX XX Homo sapiens. XX OS Unidentified.
	GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAAGGTGCTTCA AGAAGATCTAGAACAAGATCAGGGTCAATTCTCTCTCACTCA	1351	1473 CTCCAAGGGAGTAAAAGAGCATGGAAGACCTCCCAGGGTGAAGTGAAGC 1532 1261 TCACACAGATGTTTATCACAACTGGATGAAAACCTCCAAAAATTGAAATTGAAGC 1532 1533 TCACACAGATGTTTATCACAACTGGATGAAAAAAAATCCTGAGATCCTGGA 1320 1321 AGGTTCCCATGATGAACACTGGATGAAAAAAAAAAAAAA	1411 GAAGGGTCTGCACGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGA 1500

```
1896
                                                                                                                                                                                                                         2016
                                                                                                                                                                                                                                                                                                            2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  961 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1020
                                                                                                                                                                                  999
                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACTCACATGGTGGTGGTAGT 960
                                                                                                                                                                                                                                                                                                                                                          TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 780
                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                      1837 TGCTGAGGACACATTGCAAGCACAAGAGAGAGAGATTTCTAATGATGGTGGAAGGAGGGGGGAAAGA
                                                                                                                                                                                                             TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAAGATGAAGA
                                                                                                                                                                                                                                                                                                        2017 AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                   CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1021 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2410 rgaacricegaaaaagrerereaacarraggreecarricgaageeagrereac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTARGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
             TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                       ccagitircatacicatgaggggtacargatggatitigacaggcccatcagggccgggtigg
                                                                                                                                                                                                                                                                      AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTCCAAGGGAGTAAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAATTGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rcacacagarerrarcacaaccregargaaacagccaaaaarccreagarccreea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGGTGAAAGATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAAGGATGT
                                                                                                                                                                                    TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAAATGATGA
                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAACAAAGCAATTTACATAGA----
                                                                                                                                         1897
                                                                                                                                                                                                                             1957
                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                  2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2530 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                                   541
                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1501
                                             원
                                                                                     8 6
                                                                                                                                                                                ò
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                           8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                       \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             영
상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              급 상 급
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, Hi and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene preably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1597 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1477 AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1537 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA 1596
                                                                                                                                                                                                                                                                                                                                   New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1357 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1417 IGTIGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCAACAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1657 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1717 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4498 BP; 1251 A; 1118 C; 1123 G; 1006 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Indels 327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 6; Length 4498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 72.3%; Score 1737; D
Best Local Similarity 86.4%; Pred. No. 0;
Matches 2074; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 1; Page 62-63; 71pp; English
                                                                                                                          27-APR-2001; 2001WO-US013677
                                                                                                                                                                  28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                             WPI; 2002-049342/06
                                        WO200183695-A2
                                                                                                                                                                                                           (XIAO/) XIAO
                                                                               08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
Chimeric
                                                                                                                                                                                                                                                      Xiao X;
```

ጵ ጵ

```
The invention describes a composition comprising a mini-dystrophin peptide comprising a spectrin-like repeat domanin, where the domain comprises n spectrin-like repeats, and contains no more than n spectrin-like repeats, where n is an even number between 4-24, or a nucleic acid encoding a mini-dystrophin peptide. The mini-dystrophin peptide or the polynucleotide encoding it is useful as a medicament, for preparing a drug for therapeutic application and in the preparation of a composition for the areament of muscle disease, e.g. Duchenne's muscular dystrophy invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A composition for preparing therapeutic drugs, has a mini-dystrophin peptide comprising a specific number of spectrin-like repeat domains, a nucleic acid sequence encoding the mini-dystrophin peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATGCATTCAACATGGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       979 ACCTAAAGTGACTAAAGAAGATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1039 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1159 TCCTTCACACTTTGGAAGCTCCTGAAGACAAGTCATTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           919 AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1099 GAGCTATGCCTACACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 AGTITIGCCICAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAAIGTIGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5339 BP; 1638 A; 1191 C; 1187 G; 1323 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 6; Length 5339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
71.8%; Score 1725; D
Best Local Similarity 86.1%; Pred. No. 0;
Matches 2068; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 6; Fig 13; 145pp; English
                                                                                                                                                                                                             04-OCT-2001; 2001WO-US031126
                                                                                                                                                                                                                                                              06-OCT-2000; 2000US-0238848P
                                                                                                                                                                                                                                                                                                                                                                           ŝ
                                                                                                                                                                                                                                                                                                                    (UNMI ) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-435334/46.
                                                                                                                                                                                                                                                                                                                                                                     Chamberlain JS,
                                                                                                      WO200229056-A2
                      Homo sapiens.
Synthetic.
                                                                                                                                                          11-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \dot{\varsigma}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \dot{S}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                   2649
                                                                                                                                                                                                                                                                 2769
                                                                                                                                                                                                                                                                                                                    1800
                                                                                                                                                                                                                                                                                                                                                                                                                              1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3429
                                                                                                                                                                                                             GCCCAGAGAGCTGCCTCCTGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1740
                                                                                                                                                                                                                                                                                                                       GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2830 AAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG
                               2590 ACATAGGGCCTTCAAGAGGGAATTGAAAAAGAACTAAAGAACCTGTAAATCATGAGTACTCTTGA
                                                                                                                                      GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAAAAACTCTACCAGGA
                                                                                                                                                                                                                                                   GCCCAGAGAGCTGCCTCCTGAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                           GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTTGAACCTGCACTCCGCTGACTGGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2890 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATTGACTCTCCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2950 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGAAAGAGAGACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3010 rergaaagaacergagccacercaareacerrecreeccacerraceacrriggear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3130 GCAGGTGGCCGTCGAGGACCGAGTCAGCCACGATGAAGCCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3190 AGCATCTCAGCACTTTCTTTCCACGTCCCAGGGTCCCTGGGAGAGACCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3250 AAACAAAGIGCCCIACIATAICAACCACGAGACICAAACAACIIGCIGGGACCAICCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3310 AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3370 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             readerereaceraria acerca e carecte e a como a a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como a como
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u> AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC</u>
                                                                                                         GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mini-dystrophin peptide; spectrin-like repeat domain; muscle disease; Duchenne's muscular dystrophy; DMD; dystrophin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA encoding mini-dystrophin protein deltaR2-R21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA; 5339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABK81998 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A 3430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3430
                                                                                                         1621
                                                                                                                                                          2650
                                                                                                                                                                                                             1681
                                                                                                                                                                                                                                                                 2710
                                                                                                                                                                                                                                                                                                                    1741
                                                                                                                                                                                                                                                                                                                                                                        2770
                                                                                                                                                                                                                                                                                                                                                                                                                              1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABK81998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                         ò
                                                                                                                                                       S
                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                    ઠ
                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
```

ij.

g

828 120 918 180 978 240

9

1038

1098

300

1158

360

1218

480

420

8 %

ጵ 8 ጵ

A >> A

* % *

გ ≯ შ

≿

ჲ ≿

2401 A 2401 2401 A 2401 2866 A 2866 D37240 AAD37240; AAD37240; 21-AUG-2002 (first entry) Human dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; BMD; Becker muscular dystrophy; ds.	1726 TCACACAGTTTATCACACCTGGATGAAACAGCCAAAAATCCTGGATCCCTGGA 1785 1321 AGGTTCCGATGATCTTTATCACAACCTGGATGAAACATCGAAAATCCTGGATCCCTGGA 1785 1321 AGGTTCCGATGATCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAG 1380 1381 GAACTTCGGAAAAAGTCTCTCAAAGACGTTTGGATAACATGAACTTCAAGTGGAG 1440 1441 GAACTTCGGAAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGATCTGACCAGTG 1400 1441 GAACCTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCTGAAACATGATGA 1500 1906 GAACCGTCGCACCTTTCTCTGAAGAACTTCTGGTGGCTACAGCTGAAAGATGATGA 1500 1906 GAACCGTCGCACCTTTCTCTGCAAGAACTTCTGGTGGCTACAGCTGAAAGATGATGA 1500 1906 ATTAAGCCGGCAGCCACTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAAACATGT 1560 1906 ATTAAGCCGGCAGGCACTTTTGAAGACTTTCCAGCAGTTCAGAAGCAAACATGT 1500 1906 ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAAACATGT 1500 1906 ATTAAGCCGGCAGGCACTTTTGAAAACTTAAAGAACTTCAGAAGCAGAACGATGT 1500 1906 ATTAAGCCGGCAGGCACTTTTGAAAACTTAAAGAACTTCAGAAACAACAAACA
221 AAACA 2686 AAACA 2281 AATGA 2746 AATGA 2341 GACTG 2806 GACTG 2401 A 240 2866 A 286	TCCTAGAAGA 12
2101 GCAGGTGGCCCTCGAGGCCCAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC 21 2566 GCAGGTGGCCGTCGAGGCCGAGCAGCAGCATGAAGCCCACAGGGACTTTGGTCC 26 2161 AGCATCTCAGCACTTTTCTTTCCAGCTCTGTGCCAGGGAAGAGCCATCTCGCC 22 2161 AGCATCTCAGCACTTTTTTTTCCAGTCTTGTCCAGGGACAGAGAGCCATCTCGCC 22 2162 AGCATCTCAGCACTTTTTTTTTTTTTTTTTTTTTTTTTT	AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAC 1080
2445 ICIGADAGAGAACGIGAGCCACGILACIGACCIGCCCGGCAGGITACCACIIIGGGCAGGCAGGCAGGCAGGCAGGCAGGCAGGC	1545 TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 1020
03 03 03 03 03 03 03 03	900 154 960
Db 2266 AAAATAGATGAGACCTTGAAAGACTTCAAGAAGCCAGGATGAGTGACTTGA 232 Oy 1861 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGAGACCCGTGGGAGCCATGGTTCT 192 Db 2326 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGGCGATCTCT 192 Db 2326 CCTCAAGCTGCCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCT 238	TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 780
GCCCAGAGAGCTGCCTCCTGAGGAGGCCCAGAATGTCACTCGGCTTCTACGAAAGCA GCCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG GCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG	TARTATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 660
2026	13
. 2026 ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTTGA	

ą

გ ⊁

```
1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1500
                                                                                                                                                                                                                                                                                                                                                                                                                           1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1751
                                                                                                                                                                                                                                                                 1259
                                                                                                                                                                                                                                                                                                                                              1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAC 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201 CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1261 TCACACAGATGTTTATCACAAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
1020 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTTAGAAGAAGAATATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                        ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
                                                                TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                    ioso recreadeacacarrecaageacacaadaagarrireraareareregaagreereaada
                                                                                                                                             CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                     TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                         661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                            1260 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                             1320 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAAGAAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081 TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1321 AGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGGTGAAGATGATGA
                                                                                                                                                                                                                                                                                                                                                                                       TAGCATGGAAAAAAGCAAATTTACATAGAGTTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1381
                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1677
                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1501
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 % 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                              g
                                                                                                                                               ò
                                                                                                                                                                         g
                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                       8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                           9 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                   ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, or depeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operable linkage with an expression element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy minigene delta3310 contraining nucleotides 1-1668 (N-terminus, hinge H1 and rods R1 and R2), 4847-10227 (rods R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCACGGTCAGGTCTAGCACAGGGATATGAGGAGCTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCACGGTCAGGCTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACACAGGTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 AGTITIGCCICAACAAGIGAGCATIGAAGCCAICCAGGAAGIGGAAAIGTIGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u> AGTITITGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780 acctaaagtgactaaagaagaacartricagtracarcaacaargcacrartcrcaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          70.6%; Score 1695; DB 6; Length 3510; larity 85.5%; Pred. No. 0; Conservative 0; Mismatches 0; Indels 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3510 BP; 1073 A; 787 C; 828 G; 822 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 1; Page 51-52; 71pp; English
                                                                                                                                                 27-APR-2001; 2001WO-US013677
                                                                                                                                                                                        28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                            WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 2053; Conserv
                                                                    WO200183695-A2
                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                              (XIAO/)
```

g

8 6 8 6 8 6

6 6 6 6 6

```
1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2100
                                                                                                                                                                                      1681 GCCCAGAGAGCTGCCTCCTGAGGAGAGCCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1740
                                                                                                                                                                                                                                                                                                                                                                             2111
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2280
                                                                                                                                              GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGA 1931
                                                                                                                                                                                                                            1932 GCCCAGAGAGTGCCTCCTGAGGAGAGGCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1991
                                                                                                                                                                                                                                                                GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAAAATTGCGCC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2651
ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT 1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2351
                                      ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGGTACTCTTGA
                                                                    ACATAGGGCCTTCAAGAGGGAATTGAAACTAAAGAACCTGTAATCATGAGTACTCTTGA
                                                                                                            GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                1992 GGCTGAGGAGGTCAATACTGAGTGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG
                                                                                                                                                                                                                                                                                                                                         AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                         AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCGATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     cercaagerigedeaagerigagerigareaagegareerigeeagecegigegegerereer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGAAAGAGGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACACAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2292 TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGGTGGCCGTCGAGGCCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2412 AGCATCTCAGCACTTTCTTTCCACGTTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2472 AAACAAAGIGCCCIACIAIAICAACCACGAGACICAAACAACIIGCIGGGACCAICCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2532 AATGACAGAGCTCTACCAGTCTTTAGCTGACTGAATAATGTCAGATTCTCAGCTTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2341 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2101 GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                   CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A 2652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A 2401
                                                                                                                                                                                                                                                            1741 (
  1752
                                    1561
                                                                        1812
                                                                                                                                                1872
                                                                                                                                                                                                                                                                                                                                                                             2052
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2161
                                                                                                              1621
                                                                                                                                                                                                                                                                                                                                         1801
                                                                                                                                                                                                                                                                                                                                                                                                                 1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2652
요
                                à
                                                                    쉱
                                                                                                                                            g
                                                                                                                                                                                    ò
                                                                                                                                                                                                                          셤
                                                                                                              ò
                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ዊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋩
```

Adeno-associated virus vector plasmid, AAV-MCK-3510.

(first entry)

21-AUG-2002

AAD37259

ESULT 15
AD37259
(ID AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37;
(X AAD37

ВР

DNA; 4476

AAD37259 standard;

```
1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene porable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophy minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                 New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
Human, dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1416 IGTIGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1476 AGITITIGCCTCAACAAGIGAGCATIGAAGCCAICCAGGAAGIGGAAAIGTIGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTITIGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4476 BP; 1252 A; 1096 C; 1127 G; 1001 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels 348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70.6%; Score 1695; DB 6; Length 4476;
85.5%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 63-65; 71pp; English.
                                                                                                                                                                                                                           27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                               28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 85.5
Matches 2053; Conservative
                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                   WO200183695-A2
                                                                         Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                       XIAO
                                                                                                                                                                                     08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                   (XIAO/)
                                                                                                                                                                                                                                                                                                                                         Xiao X;
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
```

```
GATGITIATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC
US-08-317-844B-3

US-09-220-132-24

US-09-220-132-24

S180810-3

S180810-3

S180810-3

US-09-668-313A-17

US-09-247-155-76

S2-1018-1-122

US-09-527-431-22

US-09-55-171E-263

US-09-001-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2

US-09-01-5018-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ouery Match

55.6%; Score 1335.6;

Best Local Similarity 98.3%; Pred. No. 0;

Matches 1350; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                ALIGNMENTS
    1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1268
      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ag y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
상
음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 60, Appl
Sequence 10, Appl
Sequence 10, Appl
Sequence 9, Appli
Sequence 9, Appli
Sequence 6, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 1186, Ap
Sequence 1186, Appli
Sequence 69, Appli
Sequence 69, Appli
Sequence 61, Appli
Sequence 61, Appli
Sequence 61, Appli
Sequence 61, Appli
Sequence 61, Appli
Sequence 63, Appli
Sequence 63, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
Sequence 64, Appli
                                                                                                                                            April 4, 2004, 16:58:13 ; Search time 116.44 Seconds (without alignments) 11443.127 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                               US-09-845-416-9_COPY_600_3000
2401
1 acatgcattcaacatcgcca......tggatctcttgagcctgtca 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lssued_Patents NA:*
1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
                          GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 US-09-687-B75A-1
3 US-09-484-970B-60
3 US-09-427-0-04B-60
4 US-09-427-0-04B-10
4 US-09-901-501B-9
4 US-09-901-501B-9
4 US-09-901-501B-4
4 US-09-901-501B-4
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-13
1 US-09-687-87A-1186
1 US-09-687-976-2813
1 US-09-687-976-2813
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-09-687-978-9
1 US-08-987-978-9
1 US-08-987-978-9
1 US-08-987-978-9
                                                                                                                                                                                                                                                                                                                                                                                                                  lotal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                         682709 segs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                           - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                              finimum DB seq length: 0 faximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44
44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193952
193077
193077
193077
19308
19308
12000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
22000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20000
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          %
Query
Match Length I
                                                                                                                                                                                                                                 litle:
Perfect score:
Requence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                  scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atabase:
                                                                                                                                                                                                                                                                                                                                                                             searched:
                                                                                                                                                    dun on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lesult
```

```
RESULT 1

'Sequence 1, Application US/09687878A

'Sequence 1, Application US/09687878A

'Sequence 1, Application US/09687878A

'Sequence 1, Application US/09687878A

'Sequence 1, Application US/096878A

'Sequence 1, Application US/096878A

'APPLICANT: Liu, Paul

'TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED PE

'TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED PE

'FILE REFERENCE: 0792

'CURRENT APPLICATION NUMBER: US/09/687, 875A

'CURRENT APPLICATION NUMBER: 06/158,868

PRIOR FILING DATE: 1999-10-15

'NUMBER OF SEQ ID NOS: 22

'SOFTWARE: Patentin Version 3.1

'ENGINE NO 1

'ENGRALSM: Homo sapiens

'PATURE:

'NAME/KEY: misc feature

'OCHER INPORMATION: S4 junction site

'LOCATION: (3199)

'OTHER INPORMATION: S2 junction site

US-09-687-875A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Appli
Sequence 24, Appl
Sequence 24, Appli
Patent No. 5180810
Sequence 76, Appl
Sequence 76, Appl
Sequence 22, Appl
Sequence 22, Appl
Sequence 22, Appl
Sequence 17, Appl
Sequence 17, Appl
Sequence 17, Appl
Sequence 17, Appl
Sequence 17, Appl
Sequence 14, Appl
Sequence 14, Appl
Sequence 14, Appl
Sequence 14, Appl
Sequence 14, Appl
Sequence 14, Appl
Sequence 14, Appl
Sequence 15, Appl
Sequence 16, Appl
Sequence 17, Appl
Sequence 17, Appl
Sequence 18, Appl
Sequence 17, Appl
Sequence 18, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1148 ACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGACTCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1088 TTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2902 ingangaangcarrcaraaaadogrgangangcaangcangcrictringaangaaacrcarada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1028 TGGGCAAACATCTGTAGATGGACAGAACGCCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 5952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
```

걾

3142 GATGTTTATCACAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCC

a ð 쉱 ò g

ò d à

d à g

à. ď ò ద 8 셤 ઠે 셤 ò a 임 ò Dp ò g ò

à ద à 쉼 ਨੇ

ò 셤 ò

셤

```
; Sequence 60, Application US/09484970B; Patent No. 6426186; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Homo sapiens
                         US-09-484-970B-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-484-970B-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1208 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              원
경
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2347
                                                                                                              1447
                                                                                                                                                                                                                                   1507
                                                                                                                                                                                                                                                                                           3381
                                                                                                                                                                                                                                                                                                                                                    1567
                                                                                                                                                                                                                                                                                                                                                                                                             3441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4221
                                                     3261
                                                                                                                                                                          3321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             crácica ca a desta de contra a contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTTCAAGAGGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTCTCCAAGATCACCTCGAAGAAAGTCAAGGCACTTCGAGGAAAATTGCGCCTCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                    CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                   CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATTAAGC
                                                                                                                                                                                                                                                                                           3322 CTGCACCTTTCTCTGCAGGAACTTCTGGTGGCTACAGCTGAAAGATGATGATTAAGC
                                                                                                                                                                                                                                                                                                                                                    CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG
                                                                                                                                                                                                                                                                                                                                                                                                          cedcadecacciairedadeceacrirccadcagricagaaccagaccaracarage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3502 CGARTATTICTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3562 GAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3922 TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAAATGACA
                                                     3202 GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGAGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 4275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAACTCCGAAGGCTCTTTGCTTTGGATCTCTTGAGCCTGTCA 2401
1328
                                                                                                                 1388
                                                                                                                                                                                                                                                                                                                                                    1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3742
                                                                                                                                                                          3262
                                                                                                                                                                                                                                   1448
                                                                                                                                                                                                                                                                                                                                                                                                             3382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4222
```

1147 8395 1267 1207 8455 1327 8515 1387 ô 1087 8635 8636 CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGC 8695 1508 CGGCAGGCACTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG 1567 1568 GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA 1627 CGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGA 1687 8756 GCCTTCAAGAGGGAATTGAAAACTAAAAACTCTTGTAATCATGAGTACTCTTGAGAACTGTA 1028 TGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGA 8216 TGGAGAAGCATTCATAAAAGGGTGAGTGAGCGAGAGGCTGCTTTGGAAGAAACTCATAGA 1088 TTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA 8276 TTACTGCCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA 1148 ACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGACTCCAAG 8336 ACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGACTCCAAG GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA 3396 GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC 3456 GAIGITIAICACAACCIGGAIGAAAAAAGAGCCAAAAAAATCCIGAGAAGGITCC 1328 GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT 8516 GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT 1388 CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT B576 CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGC Gaps Length 13977; .. 0 24; Indels NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6426186 229357.11CB1
NAME/KEY: unsure.
Location: 11721-11761, 12294, 13969
OTHER INFORMATION: a, t, c, g, or other DB 4; Query Match 55.6%; Score 1335.6; Best Local Similarity 98.3%; Pred. No. 0; Matches 1350; Conservative 0; Mismatches APPLICANT: Jones, Karen A.
APPLICANT: Jones, Karen A.
APPLICANT: Volkmuth, Wayne
APPLICANT: Walker, Michael G.
APPLICANT: Walker, Michael G.
TILLE OF INVENTION: BONE REMODELING GENES
FILE REFERENCE: PB-0014 US
CURRENT APPLICATION NUMBER: US/09/484,970B
CURRENT APPLICATION NOWSER: US/09/484,970B
SOFTWARE: PERL Program
SOFTWARE: PERL Program
SEQ ID NO 60
LENGTH: 13977
TYPE: DNA

```
5878 AGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAAACTCTACCAGGAGCCCAGA 5819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTGGAGACTGTG 5879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1028 TGGGCAAACATCTGTAGATGGACAGAACCGCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6478 recegnadearrearananaenerangeeneeneereerreenaeneeneeneeneeneeneeneeneen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1088 TTACTGCAACAGTTCCCCCTGCACCTGGAAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6418 TTACTGCAGCAGTTCCCTCTGGACCTGGAGGTTTCTTTCCTGGATTACGGAAGCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6358 ACAACTGCCAATGTCCTACAGGACGCTTCCCGTAAGGAGAAGACTCCTAGAAGACTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCCAAGGTGAAATTGAAGCTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6298 GGAGTCAGAGGCTGATGAAACCATGGCAAGATCTCCAAGGAGAAATTGAAACTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6238 GATATCTATCACAATCTTGATGAAAATGCCCAAAAAATCCTGAGATCCCTGGAAGGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6118 CAGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCAAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6058 ITGCATCTTCTCTCAGGAACTTCTTGTTTGGCTACAGCTGAAGATGATGAACTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6178 GAIGAAGCACCCCIGITACAAAGACGITIGGAIAACAIGAAITICAAGIGGAGIGAACTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGAATTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            corcadocaccarcogregaerricocadeagricadaagcagardaradarada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 19307,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1143.6; DB 3; Length
Pred. No. 0;
0; Mismatches 144; Indels
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,022A
FILING DATE: US/08/836,022A
FILING DATE: 28-OCT-1994
ATTONNEY/AGENT INPORMATION:
APPLICATION NUMBER: US 08/331,381
FILING DATE: 28-OCT-1994
ATTONNEY/AGENT INPORMATION:
NAME: BAL, MATY E.
REGISTRATION NUMBER: 31,215
REGISTRATION NUMBER: 31,215
REGISTRATION STORMATION:
TELEPHONE: 215-540-9200
TELEPHONE: 215-540-9200
TELEPHONE: 215-540-9200
TELEPHONE: 215-540-9200
TELEPHONE: 215-540-9200
TELEPHONE: 215-340-9200
TELEPHONE: 215-340-9200
TELEPHONE: 215-340-9200
TELEPHONE: 215-340-9200
TELEPHONE: 215-340-9200
TELEPHONE: 215-340-9200
TYPE: MUCHANACTERISTICS:
LENGTH: 19307 Dasse pairs
TYPE: MUCHANACTERISTICS:
LENGTH: 19307 Dasse pairs
TYPE: MUCHANACTERISTICS:
LENGTH: 19307 Dasse pairs
TYPE: MUCHANACTERISTICS:
LENGTH: 19307 Dasse pairs
TYPE: MUCHANACTERISTICS:
LENGTH: 19307 Dasse pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 89.5%;
Matches 1230; Conservative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: unknown MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-836-022A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2167
        9056 CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC 9115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9416 GIGCCCTACTATATCAACCACGAGACTCAAACAACTGGGGACCATCCCAAAATGACA 9475
                                                                                               GAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG 1747
                                                                                                                                                                                                                                            8936 GAGGICAATACTGAGTGGGAAAATTGAACCTGCACTCCGCTGACTGGCAGGAAAAAAA 8995
                                                                                                                                                                                                                                                                                                                                                                          8996 GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG 9055
                                                                                                                                                                                                                                                                                                                                                                                                                                      CIGCGCCAAGCIGAGGIGAICAAGGGAICCIGGCAGCCCGIGGGCGAICICCICAIIGAC 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9116 rererecaagareacerecaagaaacreaageeacrireaagaagaaaarreegeecrereaaa 9175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9176 dagaacereaecacercareareaecerrececeaecrraceaerrreeecarreaecre 9235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG 2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9356 CAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAAAAA 9415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2288 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC 2347
                                                                                                                                      8876 GAGCTGCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                                                                                                                                                                                                                                                       1808 GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1988 GAGAACGTGAGGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9236 TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2108 GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9296 GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCCACAGGGACTTTGGTCCAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2228 GIGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9476 GAGCICIACCAGICITIAGCIGACCIGAAIAATGICAGATIATCICAGGITATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9536 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 9589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2348 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JS-08-836-022A-10/C

Sequence 10, Application US/08836022A

Sequence 10, Application US/08836022A

GENERAL INFORMATION:
APPLICANT: Trustees of the University of Pennsylvania APPLICANT: Wilson, James M.
APPLICANT: Wilson, James M.
APPLICANT: Chen, Shu-Jen
APPLICANT: Chen, Shu-Jen
APPLICANT: Weltzman, Matthew
TITLE OF INVENTION: Improved Adenovirus Virus and
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TURESSEE: HOWSON and HOWSON STREET: Spring House Corporate Cntr, P O Box CITY: Spring House Corporate Cntr, P O Box STATE: Pennsylvania
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 19477
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                         8816
                                                                                               1688
                                                                                                                                                                                                           1748
                                                                                                                                                                                                                                                                                                                                                                                                                                      1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2168
                                         요
                                                                                               ò
                                                                                                                                               g
                                                                                                                                                                                                           ે
                                                                                                                                                                                                                                                              용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ৯
                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ጵ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
```

ô

Gaps

1447 6029

```
CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGG 1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1568 GCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTA 1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1628 CGAATATTTCTGACAGAGAGAGCTTTGGAAGGACTAGAGAAACTCTAGAGGAGCCCAGA 1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1088 TTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1148 ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6358 ACAACTGCCAATGTCCTACAGGACGCTTTCCCGTAAGGAGAAGCTCCTAGAAGACTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1028 TGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6478 recesabacarrearaaagagraagreagecaagagerecriregaagaaacrearaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6418 TTACTGCAGCAGTTCCCTCTGGACCTGGAGATTTCTTTCCTGGATTACGGAAGCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1208 GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAAGGTGAAATTGAAGCTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6298 GGAGTCAGAGGCTGATGAAACCATGGCAAGATCTCCAAGGAGAAATTGAAACTCACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1268 GATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGAAGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6238 GATATCTATCACAATCTTGATGAAAATGGCCAAAAATCCTGAGATCCCTGGAAGGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1328 GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6118 cagadadactricicadacarradericcearriggadecadericredecadregadeer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGCCTACAGCTGAAAGATGATGAATTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 19307;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
47.6%; Score 1143.6; DB 3; Length
Best Local Similarity 89.5%; Pred. No. 0;
Matches 1230; Conservative 0; Mismatches 144; Indels
                 Patentin Release #1.0, Version #1.30
               SOFTWARE: Patentin Release #1.0, V
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/427,048A
FILING DATE: 21-0ct-1999
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
                                                                                                              SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: unknown

MOLECLLE TYPE: cDNA

SEQUENCE DESCRIPTION: SEQ ID NO: 10:
US-09-427-048A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                5519
                                                                                                                                                                                                                                                                                                                                                                                                                     5459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5159
                                                                                                                                                                                                   5639
                                                                                                                                                                                                                                                                          5579
                                                                                                                                                                                                                                                                                                             1987
                                                                                                                                                                                                                                                                                                                                                                                  2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2287
                                                                                                                 GAGGTCAACGCTGAATGGGACAAATTGAACCTGCGCTCAGCTGATTGGCAGAAAAATA 5699
                                          5458 TCACCTTATAACCTCAGCACTTTGGAAGATCTGAATACCAGATGGAGGCTTCTACAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5278 GTGCCCTACTATATCAACCACGAGACCCAAAACCACTTGTTGTTGGGACCACCCCAAAATGACA
                 GAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG
                                                                                        GAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAATA
                                                                                                                                                                                                     GATGAAGCTCTTGAAAGACTCCAGGAACTTCAGGAAGCTGCCGATGAACTGGACCTCAAG
                                                                                                                                                                                                                                       CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC
                                                                                                                                                                                                                                                                                                               TCTCTCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA
                                                                                                                                                                                                                                                                                                                                        TCTCTGCAAGATCACCTTGAAAAAGTCAAGGCACTTCGGGGGGAAATTGCACCTCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                     5518 GAGAATGTCAATCGTGTCAATGACCTTGCACATCAGCTGACCACACTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2048 TCACCGTATAACCTCCAGCACTCTGGAAGACCTGAAACACACAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2108 GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2288 GAGCICTACCAGICTITAGCIGACCIGAATAATGICAGATICTCAGCITATAGACTGCC
                                                                                                                                                                GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGCCCTACTATATCAACCACGAGAACTCAAACAACTTGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5218 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                  GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2348 ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5158 ATGAAGCTCAGAAGGCTCCAGAAGGCCCTTTGCTTGGATCTCTTGAGGCTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Trustees of the University of Pennsylvania Wilson, James M. Fisher, Krishna J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Box 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ribher, Shu-Jen
Chen, Shu-Jen
Weitzman, Matthew
Weitzman, Matthew
Methods of Use Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSE: Howson and Howson
STREET: Spring House Corporate Cntr, P O
CITY: Spring House
STATE: Pennsylvania
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
US-09-427-048A-10/c
; Sequence 10, Application US/09427048A
; Patent No. 6203975
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5398 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2168
                                                                                                                                                                                                     5698
                                                                                                                                                                                                                                                                                                                                                5578
                                                                                                                                                                                                                                                                                                                                                                                  1988
                                                        5818
                                                                                        1748
                                                                                                                               5758
                                                                                                                                                                1808
                                                                                                                                                                                                                                       1868
                                                                                                                                                                                                                                                                                                               1928
                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           심
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                       à
                                                      셤
                                                                                          ò
                                                                                                                                                                ò
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
```

6119

1447

1327

.. 0

Gaps

à 9 Š ą ⋩ þ አ ል ⋩

ઠે 셤

```
2990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1313
                                                                                                                                                                                                                                                                                                                                                                         954 TGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGG 1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ridardeceachardacararrahahadantidaceahahdadedadahahadada 3290
                                                                                                                                                                                                                                                                                                    TACTGCTTCAAGAACTGGGTCCTGGAGATGGTATCGTCATGGCGTTCGATAACGTCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGACACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Trcaggaragranturgschaggaactcaagcaggargcagargcagagara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crridegaaarrcneaagaggcracrargcrrcaacardgacrggargarargaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rccaagaagdagagacacacagaargrecrrcrcaagccrcrcrcadgaargcrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGAAGACTCCAAGGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCTGGAAGGTTCCGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGGAATGACTTAAAAGCAAAATCTGCTAGCATCAGGGCCCATTTGGAGGCCAGCGCTG
                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                    9
                                                                                                        Chimeric
                                                                                                                                                                                                                              Length 6045;
                                                                                                                                                                                                                              Score 487; DB 4; Length 60
Pred. No. 1.2e-139;
0; Mismatches 620; Indels
                              FEATURE:
NAME/KEY: CDS
LOCATION: (11)..(6037)
FEATURE:
OTHER INPORMATION: Description of Artificial Sequence:
FEATURE:
NAME/KEY: misc feature
LOCATION: (724)..(758)
OTHER INPORMATION: Precise residue is left open
US-09-091-501B-
TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                              Query Match
Best Local Similarity 58.3%;
Matches 878; Conservative
                                                                                                                                                                                                                                                                                                                                     2871
                                                                                                                                                                                                                                                                                                                                                                                                                                               1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3291
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
9
9
9
                                       1927
                                                                                                                                                                                                                                                                                                                                                                                                           5459
                                                                                                                                                                                                                                                                                                                                                                                                                                             2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5159
               GAGCTGCCTCGTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAG 1747
                                                                                   GAGGICAATACTGAGTGGGAAAATTGAACCTGCACTCGGCTGACTGGCAGAAAATA 1807
                                                                                                                                                                                        5698 GATGAAGCTCTTGAAAGACTCCAGGAACTTCAGGAAGCTGCCGATGAACTGGACCTCAAG 5639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCT 2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTICTACCAGICTTTAGCTGACTGAATAATGTCAGATTCTCAGCTTATAGGACTGCC 2347
                                                                                                                   5758 GAGGICAACGCIGAAIGGGACAAAIIGAACCIGCGCICAGCIGAIIGGCAGAGAAAIA
                                                                                                                                                      GATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAG
                                                                                                                                                                                                                          1868 CTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGAC
                                                                                                                                                                                                                                                     5638 TIGGCCAAGCTGAAGTGAATCAAGGGATCCTGGCAGCCAGTGGGGGATCTCCTTGAC
                                                                                                                                                                                                                                                                                                TCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAA
                                                                                                                                                                                                                                                                                                                     5578 TCTCTGCAAGATCACCTTGAAAAGTCAAGGCACTTCGGGGAGAAATTGCACCTCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                       5518 dadahrdrdandendandaddingdadandaddhdadddadhddadhidaddid
                                                                                                                                                                                                                                                                                                                                                                                                                                           2048 TCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCACTICCTTTCCACTICAGGGTCCCTGGGAGAGAGCCATCTCACCAAACAA
                                                                                                                                                                                                                                                                                                                                                                     GAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Argaagcroaaaagcrocagaagccorrractrogarcrotaggccrgroa
                                                                                   1748
                                                                                                                                                        1808
                                                                                                                                                                                                                                                                                                1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5338
                                                                                                                                                                                                                                                                                                                                                                       1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2228
```

ጵ

≿

```
Sequence 7, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Titaley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION UNMBER: US/09/091,501B
CURRENT APPLICATION NUMBER: US/09/091,501B
PRIOR FILING DATE: 1998-06-18
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR RELING DATE: 1996-07-26
PRIOR SEQ ID NOS: 15
SOFTWARE: PALENTING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
SEQ ID NO 7
LENGTH: 6045
S-09-091-501B-7
```

1493 3470

<u>Agaadriggaacaggrigcrgargrictriagaagaacrgarcaaarggcrigaarargaaag</u>

ACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAG

1434 3411 1494 3471

Ardaddactraagaacaardcetatrodagdagargriccagcerracagerccagr

ACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTA Argaccarreraageccrigagaceeegriraaageagaagaagaarrerererereaga CTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAAGC---

1554 3531

> g දු පු

8 8 8

1614 3591

ઠે

ATGATGAATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGA

3530

1613

1670 3650

-----TCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGCCCCAGAATGTCACTC 1724

crercascecedagirirerrescrareacearrangescantescecereasgaeceas

à d ò 5 ò 셤 8 셤 à g ò d ò ద à g à d ò 셤

```
1146 TACTGCTTCAAGAACTGGGTCCTGGAGATGGTATCGTCATGGCGTTCGATAACGTCCTGC 7205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7326 AGGCTGAGTGGAGGACGGTGCAGGCCTCTCGCAGAGATCTGGAAAACTTCCTGAAGTGGA 7385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7506 Trigarideceacardacaratrinaaaacearreacegaaacageagaagaregranaaag 7565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7886 AGAAGTGGAACAGGTTGCTGATGTCCTTAGAAGAACTGATCAAATGGCTGAATATGAAAG 7745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1554 ACGATGTACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTA 1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  954 IGGIAGITGAIGAAICIAGIGGAGAICACGCAACIGCIGCITIGGAAGAACAACITAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1014 TATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134 TTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1374 AGIGGAGIGAACTICGGAAAAAGICICICAACATIAGGICCCAITIGGAAGCCAGITCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1434 ACCAGTGGAAGCGTCTGCACCTTTCTCTGGAACTTCTGGTGTGGCTACAGCTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7746 ATGAAGAGCTTAAGAAACAAATGCCTATTGGAGGAGATGTTCCAGCCTTACAGCTCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1614 CTCTTGAGACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGACACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGGACCTCCAAGGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1254 TIGAAGCICACACAGAIGITIAICACAACCIGGAIGAAAACAGCCAAAAAAICCIGAGAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1494 ATGATGAATTAAGCCGGCAGCCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7386 recandandecadadecedendandidioeringradandeererenedadadangere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7566 ctricegaaaticigaagaectactatectrcaacategactegateatateaacaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      206 adaaacrecredagaararidgaagreargacacaagaarigridaaagaaaccacagagr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCA
ORGANISM: Artificial Sequence
SEATURE:
NAME/KEY: CDS
LOCATION: (11)...(10112)
SEATURE:
OTHER INFORMATION: Description of Artificial Sequence: Full length
OTHER INFORMATION: utrophin construct
                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                               Length 10320;
                                                                                                                                                                                                                                                                                                                                                                                                  Score 487; DB 4; Length 10
Pred. No. 1.8e-139;
0; Mismatches 620; Indels
                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc feature
LOCATION: (724)...(758)
OTHER INFORMATION: Precise residue is left open US-09-091-5018-9
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 58.3%;
Matches 878; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6 6 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4071 TGCGATGGAAACTITTAAAGGTTTCTGTGATGATCGCCTTAAACAGCTTCAGGAAGCCC 4130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGAGATTTTTGGACCATCCTCTCAGCATTTTCTCTCTACGTCCAGTCCAGCTGCCGTGGC 4190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3711 AAGCCAȚGCGCAAACAĞTCTTCTGAAGTCAAAGAAAAATGGGAAAGTCTAAATGCTGTAA 3770
                                                                                                                                                                                     CTAGCAATTGGCAAAGCGAAGTGGACAAGGCATTGGAGAAACTCAGAGACCTGCAGGGAG 3830
                                                                                                                                                                                                                                                                                                       CTATGGATGACCTGGACGCTGACATGAAGGAGGCAGAGTCCGTGCGGAATGGCTGGAAGC 3890
                                                                                                                                                                                                                                                                                                                                                                                                               CCGTGGGAGACTTACTCATTGACTCGCTGCAGGATCACATTGAAAAAATCATGGCATTTA 3950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAAGAAATTGCACCAATCAACTTTAAAGTTAAAACGGTGAATGATTTATCCAGTCAGC 4010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rererecaerreacersecercecretaaaaarerececaecraaarekeeraaara 4070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCC 2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTT 2264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4191 AAAGATCCATTTCACATAATAAGTGCCCTATTACATCAACCATCAAACAACAGGCCACCT 4250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GITITICIGCCIACCGIACAGCAATCAAAATCCGAAGACTACAAAAAGCACTATTTGG 4370
      GGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACT 1784
                                                                                                                                                                                                                                                CCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGC 1904
                                                                                                                                                                                                                                                                                                                                                                        CCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTC 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGGAGAAATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGC 2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2145 ACAGGGACTITGGTCCAGCATCTCAGCACTTTCTTTCCACGTCCAGGGTCCCTGGG 2204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCA 2324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATTOTOAGOTTATAGGACTGCCATGAAACTCCGAAAGACTGCAGAAGGCCCTTTGCTTGG 2384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACA
                                                                                                                              CCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 9, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Tinsley, Jonathon M
ITLE OF INVENTION: Utrophin gene expression
FILE REPERENCE: 620-42
CURRENT FILING DATE: 1998-06-18
PRIOR APPLICATION NUMBER: DCT/GB96/03156
PRIOR RILING DATE: 1998-12-19
PRIOR APPLICATION NUMBER: GB 955962.8
PRIOR APPLICATION NUMBER: GB 95597.9
PRIOR APPLICATION NUMBER: GB 952174.2
PRIOR FILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-12-4
PRIOR PLING DATE: 1996-12-4
PRIOR PLING DATE: 1996-10-26
PRIOR PLING DATE: 1996-10-26
PRIOR FILING DATE: 1996-10-26
PRIOR FILING DATE: 1996-10-26
PRIOR FILING DATE: 1996-10-26
PRIOR FILING DATE: 1996-10-26
PRIOR PLING DATE: 1996-10-26
PRIOR PLING DATE: 1996-10-26
PRIOR PLING DATE: 1996-10-26
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR PLING DATE: 1996-10-24
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
PRIOR PLING DATE: 1996-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2385 ATCTCTT 2391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arcrer 4377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -09-091-501B-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4131
                                                                                                                                                                                     3771
                                                                                                                                                                                                                                                   1845
                                                                                                                                                                                                                                                                                                              3831
                                                                                                                                                                                                                                                                                                                                                                                                                                   3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4371
                                                                                                                              1785
                                                                                                                                                                                                                                                                                                                                                                        1905
```

1193

Ä

Gaps

7505 1313 1373

1433

g

ò

1866 cherceaececesaerriterrescrearcaecearreaecearreaecece 1671 -----TCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTC

2y 1725 GGCTTCTACGAAAGCAGGCTGAGGGCCAATACTGAGTGGAAAATTGAACCTGCACT 1784	Query Match Best Local Similarity 62.5%; Matches 644; Conservative	%; Score 401; DB 4; Length 3915; 3%; Pred. No. 3.8e-113; 0; Mismatchee 385; Indels 2; Gaps 1;
2y 1785 CCGCTGACTGGCAGABABATAGATGAGCCCTTGABAGACTCCAGGAACTTCAAGAGG 1844	Oy 1363 CATGAACTICAAGTG	CATGAACTICAAGIGGAGTGAACTICGGAAAAGICTCTCAACATIAGGTCCCATITGGA 1422
2y 1845 CCACGGARGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGGATCTTGGCAGC 1904	Oy 1423 AGCCAGTTCTGACCACACACACACACACACACACACACAC	AGCCAGTICTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTICTGGTGTGGCT 1482
2y 1905 CGGIGGGGATCTCCTATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTC 1964	Oy 1483 ACAGCTGAAACATGA 	ACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACTATTGGAGGCGACTTTCCAGCAGT 1542
2y 1965 GAGGAGAAATTGCGCCTCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGC 2024	Qy 1543 TCAGAAGGAGAAGGA Db 724 GCAACAGGAGAAGGA	TCAGAAGCAGAACGATGTACATAGGCCTTCAAGAGAATTGAAAACTAAAGAACTGT 1602
2) 2025 TTACCACTITGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACGTGAACA 2084	OY 1603 AATCATGAGTACTCT	AATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGGGGGCCCTTTGGAAGGACT 1662
2y 2085 CCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCAGGTGGGGGCGGTGCATGAAGCCC 2144	Oy 1663 AGAGAACTCTACCA 	AGAGAAACTCTACCAGGAGCCCAGAGGGCTCCTGAGGAGAGAGGCCCAGAATGTCAC 1722
2y 2145 ACAGGGACTTIGGICCAGCATCTCAGCACTTICTITCCACGICTGICCAGGGICCCTGGG 2204	Oy 1723 TCGCTTCTACGAAA 	TCGGCTTCTACGAAAGCAGCCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCA 1782
2y 2205 AGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACATT 2264	9y 1783 CTCCGCTGACTGGCA 	CTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGA 1842
2y 2265 GCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGCTGAATAATGTCA 2324	Oy 1843 GGCCACGGATGAGCT Db 1022 GGCATGGAGGAACT	GGCCACGANTGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCA 1902
2y 2325 GATTCTCAGCTTATAGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGG 2384	Qy 1903 GCCCGTGGGCGATCT	GCCGTGGGGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACT 1962
2y 2385 ATCTCTT 2391. Db 8646 ATCTCTT 8652	Oy 1963 TCGAGGAGAAATTGC	tcaagaraaatigcgcctctgaagagaacgtgaccacgtcaatgaccttgctcgcca 2022
RESULT 7 US-09-976-594-93	Qy 2023 GCTTACCACTTTGGG	GCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCGGGACTCTGGAAGACCTGAA 2082
; Sequence 93, Application US/09976594 ; Patent No. 6673549 ; GENERAL INFORMATION: ; AppliCANT: Furness Michael	2093 CACCAGATGGAAGCT	CACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGC 2142
APPLICANT: Buchbinder, Jenny TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS FILE REFERENCE: PA-0041 US CURRENT APPLICATION NUMBER: US/09/976,594	00	CACAGGBACTTTGGTCCAGCALCTCAGCACTTTTCTACGAGGTCTGTGCAGGGTCCCTG 2202
표합답판	Oy 2203 GGAGAGAGCGATCTC	ggagagagccatctcgccaaacaaagtgccctactatatcaaccacgagactcaaacaac 2262
	Oy 2263 TIGCIGGGACCAICC	tigcigggaccaicccaaargacagggtciaccagtciitagcigacctgaataatgt 2322
; ORCANISM: Homo sapiens ; FEATURE: ; NAME/KEY: misc feature	Oy 2323 CAGATICICAGCITA	CAGATICTCAGCITATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTT 2382
; OTHER INFORMATION: Incyte ID No. 6673549 290344.1 US-09-976-594-93	Db 1502 TAAGTTCTCAGCTTAT Qy 2383 GGATCTCTTGA 2393	rcgcacrgccargaaacrccgcagagrccagaaagcccrgcgcrr 1561 3

유

```
973 TGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAAGGTATTGGGAGATCGATGGGC 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   973 TGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGC 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                913 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACTGGTGGTGGTAGTTGATGAATCTAG 972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 GCCTGAACAGGTGAAAGTAAATTCACTAACTCACATGGTGGTCATTGTTGATGAAAACAG 123
                                                                                                                                                                                                                                                                                                                                                                                         913 ACAAGAACAAGTCAGGGTCAATTCTCTCACTCACAŢGGTGGTGGTAGTTGATGAATCTAG 972
                                                                                                                                                                                                                                                                                                                                                                                                                                              64 AGCTGAACAGGTGAAGTACATTACTCACATGGTGGTGATTGTGGATGAAAACAG 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        124 radadakondecekenderreridaakarekorracadaakeridadadeedeeridake 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               124 regreagacecracactranceradadecaerracadaactregreagecerecae 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 réargreaaarcréracaaaacrecradaagaacaraaaagrrigeaaagrergeaaga
                                                                                                                                                                                                                                                                         853 TGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                                                                                                                                                                                              4 reaccitecerceirecagaagérecrecagaácaraaagrigeagaragacerea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      853 IGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGA
                                                                                                                                                               Score 78.6; DB 4; Length 200;
Pred. No. 2.9e-14;
0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 78.6; DB 4; Length 200;
Pred. No. 2.9e-14;
0; Mismatches 74; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION UTROPHIN GENE EXPRESSION
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT APPLICATION NUMBER: US/09/091,501B
PRIOR APPLICATION NUMBER: PGF-18
PRIOR APPLICATION NUMBER: GB 9525962.8
PRIOR FILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-10-19
PRIOR FILING DATE: 1996-07-26
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR APPLICATION NUMBER: GB 9622174.2
PRIOR APPLICATION NUMBER: GB 9622174.2
SOFTWARE: PALENTING DATE: 1996-10-24
SOFTWARE: PALENTING DATE: 1996-10-24
SOFTWARE: PALENTING DATE: 1996-10-24
SOFTWARE: PALENTING DATE: 1996-10-24
SOFTWARE: PALENTING DATE: 1996-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 6, Application US/09091501B Patent No. 6518413 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1033 AAACATCTGTAGATGGA 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1033 AAACATCTGTAGATGGA 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGTATGCCGTTGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184 AGCTGTATGCCGCTGGA 200
                                                                                                                                                                  Query Match 3.3%;
Best Local Similarity 62.4%;
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 62.4%;
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA; CRGANISM: Homo sapiens
US-09-091-501B-6
; SEQ ID NO 4
; LENGTH; 200
; TYPE: DNA
; ORGANISM: Mus sp.
US-09-091-501B-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
US-09-091-501B-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  985 AACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATCTGTAG 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              865 CCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGT 924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76 GAAGGTGAATTCCTTAACTCATATGGTGGTGATTGTGGATGAAAACAGTGGGGAGAGCGC 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    136 cacaderierriridgaladarclagriracadaalacriggergageecregacagergrafieced 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        925 CAGGGICAATICICICACACATGGIGGIGGIAGITGATGAATCIAGIGGAGAICACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16 ccrecalalaccrecrealealealealalalalaecerealeacerealeacerealeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 200;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 79.4; DB 4;
Pred. No. 1.6e-14;
0; Mismatches 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/09091501B
Patent No. 6518413
GENERAL INFORMATION:
APPLICANT: Tinaley, Jonathon M
APPLICANT: Tinaley, Jonathon M
APPLICANT: Tinaley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENT APPLICATION NUMBER: US/09/091,501B
CURRENT FILING DATE: 1996-06-18
PRIOR PILING DATE: 1996-12-9
PRIOR PILING DATE: 1996-12-9
PRIOR PLING DATE: 1996-12-6
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-0-26
PRIOR PILING DATE: 1996-10-24
NUMBER OF SEQ 1D NOS: 15
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                         Sequence 5, Application US/09091501B
Patent No. 6518413
Patent No. 6518413
Patent No. 6518413
Patent No. 6518413
Patent No. 6518413
Patent No. 6518413
Patent Normarion: User Normarion Wapplicant: Tinaley, Onathon Mapplicant: Davies, Kay E
PRICANT: Davies, Kay E
CURRENT APPLICATION: Usrophin gene expression FILE REFERBNCE: 620-42
CURRENT APPLICATION UNMERR: US/09/091,501B
PRIOR APPLICATION NUMBER: CT/GB96/03156
PRIOR PILING DATE: 1996-12-19
PRIOR FILING DATE: 1996-12-19
PRIOR PILING DATE: 1996-07-26
PRIOR APPLICATION NUMBER: GB 962174.2
PRIOR PILING DATE: 1996-07-26
PRIOR PILING DATE: 1996-10-24
NUMBER: PATENT NOR DATE: 1996-10-24
SOUTHARE: PATENT NOR: 15
SOUTH NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 64.3%;
Matches 119; Conservative (
     ||| || | | 1
1562 GGACCTGGTAA 1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1045 ATGGA 1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: DNA
; ORGANISM: Rattus sp.
US-09-091-5018-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       196 CTGGA 200
                                                                                                                  RESULT 8
US-09-091-501B-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
US-09-091-501B-4
```

ò 셤 ઠે 엄 d ઠે

ò

0; Gaps

us-09-845-416-9_copy_600_3000.rni

```
Sequence 13, Application US/09687875A
| Sequence 13, Application US/09687875A
| Patent No. 6544786
| Patent No. 6544786
| Patent INCOMATION:
| APPLICANT: Xiao, Xiao
| APPLICANT: Liu, Paul
| TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED PE FILE REPERRENCE: 00792
| CURRENT APPLICATION NUMBER: 05/09/687,875A
| CURRENT APPLICATION NUMBER: 60/158,868
| PRIOR PRICATION DATE: 1999-10-15
| NUMBER OF SEQ ID NOS: 22
| SOFTWARE: Patentin version 3.1
| SEQ ID NO 13
                                                                              813 AAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAAC 872
                                                                                                                                                                  169 TTCGGACGCACGCACTACTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGA 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619 AAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCA 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1324 TTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                       873 GCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAACAAGTCAGGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
1.9%; Score 46.2; DB 4; Length 505;
Best Local Similarity 17.4%; Pred. No. 0.00059;
Matches 54; Conservative 131; Mismatches 124; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 238;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
US-09-621-976-15639/C
Sequence 15639, Application US/09621976
Patent No. 6639063
GENERAL INFORMATION:
APPLICANT: Under Minne Edwards, J.B.
APPLICANT: Jobert, S.
APPLICANT: Glordano, J.Y.
TITLE OF INVENTION: ESTE and Encoded Human Proteins.
FILE REFERENCE: GENSET.054PR2
CURRENT APPLICATION NUMBER: US/09/621,976
CURRENT PILING DATE: 2000-07-21
NUMBER OF SEQ ID NOS: 19335
SOFTWARE: Patent.pm
SEQ ID NO 15639
LENGTH: 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 63.6; DB 4;
Pred. No. 1.4e-09;
0; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: DXX-C2 5' junction US-09-687-875A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA OKGANISM: Artificial Sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.6%;
illarity 94.3%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1384 ACTTCGGAAA 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              229 ACTTCGGAAA 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-621-976-15639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
hes 66; Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S:
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                              ò
                                                                                        g
                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       513 TITCIAATGATGTGGAAGTGGTGAAAGACCCAGTTTCATACTCATGAGGGGTACATGATGG 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  573 ATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTG 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             633 GAACAGGAAAATTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAA 692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        693 ATTCAAGATGGGAATGCCTCAGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAG 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 753 ITTTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAACAG 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.2%; Score 76.6; DB 1; Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
3.2*; Score (10.0) Local Similarity 6.7*; Pred. No. 1.5e-12;
Matches 28; Conservative 236; Mismatches 155; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: USA
ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/WS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                      Sequence 14, Application US/08232463
Patent No. 5670367
GENERAL INPORMATION:
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKNER, F.
APPLICANT: FALKNER, F.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS NUMBERS OF SEQUENCES: 52
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30472/114 IMMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/935,313
FILING DATE:
FILING DATE: 26-MUG-1991
ATTONNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 30472/114 IMM
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300
                                                                                                                                                                                                                                                                                                     ADDRESSEE: Foley & Lardner
STREET: 1800 Diagonal Road, Suite 500
CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEX: 899149
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (703) 683-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) IMMMEDIATE SOURCE:
; CLONE: pTZgpt-F18
JS-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                            08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGIH:
```

ጵ

≿

ጵ ď ጵ

```
OTHER INFORMATION: 114 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 OF 15 O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc feature
LOCATION: (315001)..(3330000)
OTHER INFORMATION: n=a or c or g or t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AME/KEY: misc_feature
OCATION: (255001)..(270000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AME/KEY: misc feature
COCATION: (270001)..(285000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AME/KEY: misc feature
OCATION: (240001). (255000)
THER INFORMATION: n=a or c or g or
                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OCATION: (300001)..(315000)
LLING DATE: 1998-11-24
SEQ ID NOS: 6849
                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc feature
LOCATION: (30001)...(45000)
OTHER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc feature
LOCATION: (45001). (60000)
OTHER INFORMATION: n=a or c or
NAME/KEY: misc feature
LOCATION: (60001)..(75000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: (60001)..(75000)
OTHER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (7501)..(9000)
OTHER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc feature
LOCATION: (90001)..(105000)
DTHER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AME/KEY: misc feature
OCATION: (16501)..(18000)
THER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AME/KEY: misc feature
LOCATION: (22501)..(24000)
THER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                   LOCATION: (1). (15000)
OTHER INFORMATION: n=a or c or
                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (15001)..(30000)
OTHER INFORMATION: n=a or c or
                                                                                                                                                                               ORGANISM: Chlamydia pneumoniae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (28501)...(300000)
THER INFORMATION: n=a or c
                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc feature LOCATION: (15001)..(300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WAME/KEY: misc_feature
                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
                                                                                                           1230025
                                        NUMBER OF S
SEQ ID NO 1
LENGTH: 12
                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-668-313A-10

Sequence 10, Application US/09668313A

Patent No. 5503756

GENERAL INFORMATION:
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
APPLICANT: Bretz C. Monia
FILE PEPERCONT: Bretz C. Monia
CURRENT APPLICATION NUMBER: US/09/668,313A
CURRENT FILING DATE: 2000-09-22

NUMBER OF SEQ ID NOS: 247
SEQ ID NO 10
SEQ ID NO 10
LENGTH: 2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: GAITfals, R.
TITLE OF INVENTION: Chlamydia pneumoniae genomic sequence and polypeptides, fragments
TITLE OF INVENTION: thereof and uses thereof, in particular for the diagnosis, preve
TITLE OF INVENTION: and treatment of infection
FILE REPRENCE: 9710-003-999
CURRENT APPLICATION NUMBER: US/09/198,452A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2261 ACTIGCIGGGACCAICCCAAAAIGACAGAGCICTACCAGICTITAGCIGACCIGAAIAAI 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1733 roddagdaadcrracacaacaacaargdaarcaachcrrcarcaacacacacacacaachca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1793 accreciadarceacecegraricacececergaacererererereadadadadada 1852
                                                                                                                                                                                                                                                                                                                                                                                                   207 RMCRRWWMSCRRBSYSCMGSKCMSCRGTCAKWWRYARYARRYAKRYASSMGKYMMGCRWCYAKC 148
       445 AATYAACRWAWAWGAGAAWKRWKMAGSMRACARAGTTMAWGACWAMARRGWRCARGR--T 388
                                                                              327 SGMWWTSYKCTKTGKKYTGWKSKKTRWTCTSWRKYMWMSGCWARSMKSWARSWYSMAAC 268
                                                                                                                                                                                                                                                                                                                                                              799 GCTAACAAAACAGAAGAAAGAACAAGGAAAATGGAGGAAGAGCCTCTTGGACCTGATCT 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    859 TGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGA 918
                                                                                                                                                                                                                       CAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTG 798
                                                                                                                                                 GSWGSWKGGYRMWGRGMAAAKMRRMAAAGGSYCGMTSYTSGSKMTGRKGSMTKRKRMMTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2201 TGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATGTCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
1.8%; Score 44.2; DB 4; Length 2574;
Best Local Similarity 54.7%; Pred. No. 0.0078;
Matches 88; Conservative 0; Mismatches 73; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2321 GTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAG 2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1853 GAGGACTGTCCCAGAGGCTAACAGACCCGAAAAGCTGATG 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09198452A
Patent No. 6559294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             919 ACAAGTCAGGG 929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | : |::::::
147 ARMYGYYRSRS 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; NAME/KEY: CDS
; LOCATION: (218)...(1891)
US-09-668-313A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 15
US-09-198-452A-1/c
                                                                              619
                                                                                                                                                    387
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                              ઠે
                                                                                                                                                 셤
                                                                                                                                                                                                                       ठ
                                                                                                                                                                                                                                                                                                                                                              8
```

```
656477 AATTAGAAGAAGAAAGAGAAGAAATTGAGGATATCAAAGACTCTCAGATACAAAT 656418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           656417 dedriricearicacreadecrecraarracaraacereaciaeceaacearrirarered 656358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 642 AATTATCAGAAGATGAAGAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGAT 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  702 GGGAATGCCTCAGGGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              656357 CAATTAAGCAGAAAAAACTAAAAGCTTCTAAAAGAACGCGCTGGGAAATAGA 656306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4; Length 1230025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      762 ATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
1.8%; Score 44; DB 4; Length 1230
Best Local Similarity 53.5%; Pred. No. 0.72;
Matches 92; Conservative 0; Mismatches 80; Indels
Search completed: April 5, 2004, 08:24:54 Job time : 121.44 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (885001)...(900000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
LOCATION: (900001)...(915000)
OTHER INFORMATION: n=a or c or g or t
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
3858
                                                                                                                                                                                                                                                                                                                                                            US-09-845-416-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appl
Appl
                                                      April 5, 2004, 04:53:30 ; Search time 582.2 Seconds (without alignments) 15454.047 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Al
Sequence 28, Sequence 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 29,
Sequence 35,
Sequence 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 31,
                                                                                                                     1 acatgcattcaacatcgcca......tggatctcttgagcctgtca 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2,
Sequence 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 10,
Sequence 30,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                            4940860
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-845-416-9
US-09-845-416-29
US-09-845-416-29
US-09-845-416-28
US-09-845-416-36
US-09-845-416-34
US-09-845-416-34
US-09-845-416-34
US-09-845-416-34
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
US-09-845-416-30
                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                     2470430 segs, 1873665578 residues
                                                                                                 US-09-845-416-9_COPY_600_3000
2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                      - nucleic search, using sw model
                                                                                                                                         IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Published
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0
1000.0
1000.0
1000.0
933.7
933.7
933.7
76.6
76.6
72.3
71.3
71.8
71.6
70.6
                                                                                                                                                                                                                                                                                                                                                                                          10:
                                                                                                 Title:
Perfect score:
                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM nucleic
                                                                                                                       Sequence:
                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                      Database
                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lesult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       š
```

equence 39,	equence 42,	equence 1,	equence 44,	equence 47,	quence 22,	equence 2284	equence 1,	equence 434	equence 981	equence 108	equence 4,	equence 32,	equence 14,	Sequence 2, Appli	equence 3,	equence 7,	equence 13,	11,	equence 15,	equence 4,	quence 23,	equence 3,	equence 667	equence 157	equence 32,	equence 31,	equence 9,	equence 8,	Sequence 33, Appl	
-149-73	-10-149-736-4	-09-845-41	-10-149-736-4	-10-149-736-4	-09-782-378A-	09-880-107-22	5-10-149-736-	5-10-342-887-43	5-10-342-887-	-10-341-434-10	5-09-845-416-	5-09-845-416-3	S-09-845-416-	49-736	S-09-845-416-	-09-845-416-	-09-845-416-1	-09-845-416-	-09-845-416-1	S-10-149-736-	39-782-378A-	S-10-149-736-	-10-101-510-6	-10-220-120-15	-149-736-	-10-149-736-3	-10-149-736-	3-10-149-736-	-10-149-736-	
15	15	10	15	15	σ	σ	15	12	12	15	10	10	0	15	70	10	70	10	10	15	σ	12	14	12	15	13	15	13	15	
41	89	105	144	205	395	95	395	406	408	408	16	41	44	13815	9	99	82	34	43	109	30	030	653	10	œ	4	m	N	a	
o,	'n.	'n	'n.	'n.	S.	'n	'n	'n.	'n.	'n.	'n	ď.	ď	47.6	'n,	4.	ċ	ä	4.	ö	ö	ö	φ.	ζ.	ė	4.	m.	m.	m.	
4	335	335	335	335	335	LO.	335	335	335	335	3	CA.	N	1143.6	092	0	976	750	589	495.6	487	487	475	411.8	387	348	331	327	324	
16	17	18	19	50	21	22	. 23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	ტ ტ	40	41		43			

ALIGNMENTS

```
600 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTGGTCCTGAAGA 659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720 AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 ACCTAAAGTGACTAAAGAAGAAGATTTTCAGTTACATCATCAAAATGCACTATTCTCAACA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660 rerrearaccaccrarccagaraagaagrecarcrraargracarcacacrerrea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
Sequence 9, Application US/09845416
Publication No. US20030171312A1
Publication No. US20030171312A1
Publication No. US20030171312A1
APPLICANT: XIAO, XIAO
TITLE OF INVENTION: THEREOF
FILE REPERBNCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/200,777
NUMBER: OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10, Length 3858;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indela
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 2401;
100.0%; Pred. No. 0;
live 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 100.
Matches 2401; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Homo sapiens
US-09-845-416-9
```

면 상 면

8 8

음 중 음

ठ व ठ

8 & 8 &

QC

8 8 8

음 양 양

8 6

8 8

상 임

8 8 8

ብ አ

N

Mon Apr 5 16:30:05 2004

<u>ک</u> م

us-09-845-416-9_copy_euu_suuu.rnpn

DD 1957 TAATATTCTACAATTGGGAAGTAAGCTGAATGGAAACAGGAAAATTATCAGAAGATGAAGA		Oy 721 TAGCATGAAAACCAAAGCAATTTACATAGATTTAATGGATCTCCAGAATCAGAACT	Oy 841 GCCTCTTGGACCTGATCTTGAAGACCTAAAAGGCCAAGTACAACAACATAAGGTGCTTCA	0y 961 TGATGATCTAGTGGAGATCACCCCATTGGAGAGAACAACAACTAAGGTATTGGG 100 1	Gaps 0; Db 2377 CTGAAGA 60 Db 2437	CCTGAAGA 1416	Qy 1201 AAGGCC 180 Db 2557 AAGGCC 1536	CTCAACA 240 Qy 1261 CTCAACA 1596 Ov 1301	ATTCAA 300 Db 2677 ATTCAA 1656 Qy 1381		1776 QY 1501 480 Db 2857	540 Qy 1561 540 Db 2917 1896 Oy 1621	600 Db
	2401 A 2401 3000 A 3000	6-29 9, Application US/09845416 n No. US20030171312A1 F. NAMATION: INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE	TITLE OF INVENTION: THEREOF FILE REFERENCE: DEILAGE CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30 PRIOR APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1	ens 100 08. 00000 0401. DB 10. Tenath	Local Similarity 100.0%; Pred. No. 0; Local Similarity 100.0%; Pred. No. 0; Local Conservative 0; Mismatches 0; Indels 0; 1 ACATGCATTCAACATGCCAGATATCAATTAGGCATAGAGAAACTACTCGATC	1357 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCC 61 TGTTGATACCACCTATCCAGATAAGAAGACCCATTGTTTAATGTACATCACACTCACT		181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATT 		301 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGAG 1657 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAG 1657 GAGCTATGCCTACACACACAGGTGCTTATGTCACCACCTCTACACGAGGAGAACAACTCTACACGAGGAGAACAACTCTACAGAGAACAACTCTTTAGACAAGTTCATTGATTG		1777 IGAAGIAAACCIGGACCGGTAICAAACAGCTITAGAAGAAGIATTAICGGGGCTITTIC 481 IGCTGAGGACACTTGCAAGCACAAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1837 IGCTGAGGACACATTGCAAGCACAAGAAGAAGATTTCTAATGATGATGTGGAAGTGGTGAAAGA	541 CCAGTITCATACTCATGAGGGTACATGATGAATTTGACAGCCCATCAGGGCCGGGTTGG

1800 1 2 名がらいかけられています。 ひかい かんかい かんかい かんかい かんかい かんかい かんかい かんかい	Total policopi.	
GCCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGGCACTGGCACGGGGGGGG	ò	1 ACATG
	g &	1380 ACATG
aaaaatagatgagacccttgaaagactccaggaacttcaagaggccacggatgagctgga 321	<u>ස</u>	 1440 TGTTG
1861 CCTCAAGCTGGGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGGGGATCTCCT 1920 3.3.7 CCTCAAGCTGCGCCAAGCTGAAGTGAAGTGAAGCAAGCTGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAA	È	121 AGITT
CATTOACTCTCCAAGATCACCTCGAGAAAGTTCAAGGCACTTCGAGGAGAAATTGCGCC 198	ag S	- a; a
3277 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 3336	Š ₽ ₽	181 ACCIA
1981 TCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2040 3337 TCTGAAAGAAAACTTAACTAACTTAACTTAACTTTGATCAATTAACTAAC	ò	
TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT 210	음 <i>장</i>	1620 GATCA 301 GAGCT
TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAGATGGAAGCTTCT	ପ୍ର	 1680 GAGCT
2101 GCAGGTGGCCGTCGAGGAGCCGAGTCAGCTGCATGAACCCCAAGGGACTTTGGTCC 2160 14	8	
AGCATCTCAGCACTITCTTTCCACGTCTGTCCAGGTCCCTGGGAGAGAGAGCCATCTCGCC 222	8 &	1740 TCCTT 421 TGAAG
AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGCCATCTCGCC	셤	1800 TGAAG
2221 AAACAAAGGGCCCTAACTATTATTAACAACAAGAACTTCAAACTTGCTGGGAACCAA 2280 3577 AAACAAAGTGCCCTACTATTATCAACCACGAGAACTCCAAACAACTTGCTGGGAACAACAAACA	ò	
AANGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG 234	9 &	1860 TGCTG 541 CCAGT
AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG	요	1920 CCAGT
2341 GACTGCATGAAACTCCGAAGACTGCAGAGCCCTTTGCTTGGATCCTTGGGCCCTGTC 2400 3697 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 3756	ò	
2401 A 2401	<u>ස</u> දි	
3757 A 3757	ò i	
	8 8	2040 AACTG 721 TAGCA
US-09-845-416-35 ; Sequence 35, Application US/09845416	. A	
ation No. US20030171312A1 INFORMATION:	ò	781 GAAAG
; APPLICANT: XIAO, XIAO ; TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE ; TITLE OF INVENTION: THEREOF	qo	2160 GAAAG
REFERENCE: DELLA?	ò	841 GCCTC
	ΩD	2220 GCCTC
AFFLICATION NUMBER: 00/200,/// PILING DATE: 2000-04-28	λõ	901 AGAAG
NOWBER OF SEV ID NOS: 30 STRIMARE Patentin Ver. 2.1	qa	2280 AGAAG
NO 33 TH: 4848 This ball	ò	961 TGATG
IIED: DNA GANISMI Homo sapiens GO-845-416-35	qq	2340 TGATG
100 0%: Score 2401	à	1021 AGATO
	i	

```
1799
                                                                                       1859
                                                                                                              1979
                                                                                                                                                                     2279
          1439
                     1499
                                1559
                                           1619
                                                      1679
                                                                                                   1919
                                                                                                                         2039
                                                                                                                                                2159
                                                                                                                                                           2219
                                                                                                                                                                                 2339
                                                                                                                                                                                      1020
                                                                                                                                                                                            2399
                                                            TATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 360
                                                                                                                               240
                                                                       420
                                                                                  480
                                                                                              540
                                                                                                         009
                                                                                                                    099
                                                                                                                                                      840
                                                                                                                                                                 900
                                                                                                                                                                            960
ò
                120
                           180
                                                 300
                                                                                                                                          780
     9
                                                                                                                                                                                                 TITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGCCCGGGTTGG
                                                                                                                    Gaps
.
0
Indels
·;
0; Mismatches
onservative
```

Qy 2161 AGCATCTCAGCACTTTCTTCCAGGACGAGGAGAGAGAGAG	RESULT 4 US-09-845-416-36 i Sequence 36, Application US/09845416 i Publication No. US2030171312A1 i GENERAL INFORMATION: i APPLICANT: XLAO, XLAO, i TITLE OF INVENTION: THEREOF i TITLE OF INVENTION: THEREOF i TITLE OF INVENTION: THEREOF i TITLE OF INVENTION: THEREOF i TITLE OF INVENTION: UNMERR: US/09/845,416 i CURRENT FILING DATE: 2001-04-30 i PRIOR FILING DATE: 2000-04-28 i NUMBER OF SEQ ID NOS: 36 i SOFTWARE: PatentIn Ver. 2.1 i SEQ ID NO 36 i LENGTH: 5060 TYPE: DNA i ORGANISM: Homo gapiens US-09-845-416-36	Query Match Best Local Similarity 100.0%; Score 2401; DB 10; Length 5060; Batches 2401; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Qy 1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGAAGA 60 Db 1592 ACATGCATTCAACATATCAATTAGGCATAGAGAAACTACTACTGCAAGA 1651 Qy 61 TGTTGATACCACTATCCAGATATCAATTAGGCATAGAGAAACTACTACTGAAGA 1651 Db 1652 TGTTGATACCACTATCCAGATAAGAAGAGAGACCATCAATCA	121 1712 181 1772 241 1832 301 1892 361
1081 TCATAGATTACTGCAACAGTTCCCCCTGGAACTGGAAAAGTTTCTTGCCTGGCTTACAGA 1140 2460 TCATAGATTACTGCAACAGTTCCCCTGGAACTGCAAAAGTTTCTTGCCTGGCTTACAGA 1240 1240 1241 1	1381 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 1440 2760 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 2819 1441 GAAGCTCTGCACCTTTCTCTGCAGAACTTCTGGTGTGGTTACAGCTGAAAGATTGTATG 1500 2820 GAAGCGTCTGCACCTTTCTCTGCAGAACTTCTGGTGGTTACAGCTGAAAGATGATGA 2879 1501 ATTAAGCCGGCACCTTTCTTCTGCAGAACTTCTGGTGGTTACAGAAGATGATGA 2879 1501 ATTAAGCCGGCAGCACTTTTGGAGGCGACTTTCCAGCAGTTCAGAAGCAAACATTGT 1500 2880 ATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAACGATGT 2939 1561 ACATAGGGGCCTTCAAGAGGAGCAACTTACAAAGAACCTGTAATCATGAGTACTTTGA 2999 1621 GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAACCTGTAATCATGAGTACTTTGA 2999 1621 GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAACCTGTAATCATCAAGAGAACCTTTGA 2999 1621 GACTGTACGAATATTTTCTGACAGAGCAGCCTTTGGAAAACCTGACAGGA 1680 1621 GACTGTACGAATATTTTTTGAACAGACCTTTTGGAAAACCTTAACCAGGA 3059	0-0 0-0 4-4	1861 CCTCAAGCTGCGCCAAGCTGAGGTGCTGGCAGGCCGTGGGCGATCTCCT 1920 1921 1921 1921 1921 1922 1923 1923 1923 1923 1924 1925

8 5 8 5 8 5 8 5

8 8 8 8 8 8 8 8

원 상 원

\$ \$ \$

ର ୪ ର

2 2 2 2 2

¥ # ¥ #

≿ ŏ ≿ હ ≿ ઝ ⋩ બ્ર ≿ ŏ ≿

```
1020
                                                                                                                                                                                             1078
                                                                                                                                                                                                                            1679
                                                                                                                                                                                                                                                                                                                         1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2399
                                   1499
                                                                                                                                                                                                                                                                                           1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1839
     900
                                                                                                                             TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCG
     GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAAGGTGCTTCA
                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                   AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACATGGTGGTGGTGGTAGT
                                                                                                                                                               TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                             AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGAC--
                                                                                                                                                                                                                          AGATCGATCGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACCA
                                                                                                                                                                                                                                                                                           GCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCT
                                                                                                                                                                                                                                                                                                                                                        1740 GGTGACACAACCTGTGGTTACTAAGGAAACTGCCATCTCCAAACTAGAAATGCCATCTTC
                                                                                                                                                                                                                                                                                                                                                                                      ------ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                      crrgargrregaggraccráctcáragarracriscaacagrrececerssacers
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCCAAGGTGAAATTGAAGCTCACAGATGTTTATCACAAACCTGGATGAAAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>AGTICAGAAGCAGAACGAIGIACAIAGGGCCTITCAAGGGGGGAAITGAAAACTAAAGAACC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTCAGGAGAGAGCCCAGAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCA
                                                                   TAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTACAGCTGAAAGATGAATTAAGCCGGCAGGCACCTATTGAAGGCGACTTTCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGAGGAAAAATTGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTTGGA
                                                                                                                                                               1560'
                                   1440
                                                                                                                                                                                                                          1620
                                                                                                                                                                                                                                                                                                                                                                                                                     1800
                                                                   901
                                                                                                1500
                                                                                                                               196
                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                            1079
                                                                                                                                                                                                                                                                                           1680
                                                                                                                                                                                                                                                                                                                       1079
                                                                                                                                                                                                                                                                                                                                                                                        1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2400
                           g
                                                                8 8 8
                                                                                                                                                        셤
                                                                                                                                                                                 ò
                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                     8 8
                                                                                                                                                                                                                                                                                                                                               ठ हे ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
상
음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1079
                                                                                                                                                                                                                                                                                                      629
                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                       719
                                                                                                                                                                                                                                                                                                                                                                                                                                    779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               840
                                                                                                                                                                                                                                                                                                                                                                                                     AGITITIGCCICAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAAIGITGCCAAGGCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTTAGCCTCGATTCAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGCAGCCCATT 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 420
                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG
                                                                                                                                                                                                                                                                                                                                                        TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                             AGTITITGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                 600 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTAAAGTGACTAAAGAACAATTTTCAGTTACATCATCAAATGCACTATTCTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                      1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGAGGACACATTGCAAGGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGTITCATACTCATGAGGGGTACATGATTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGAGTTGAATGACTGGCTAACAAAAACAGGAAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                           141;
                                                                                                                                                                                                             Length 3999;
                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                             DB 10;
                                                                                                                                                                                                         Query Match
Best Local Similarity 94.5%; Pred. No. 0;
Matches 2401; Conservative 0; Mismatches
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
FRIOR APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFUTWARE: PATENTIN Ver. 2.1
LENGTH: 3999
                                                                                                                                            TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                            IS-09-845-416-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1260
                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                       099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
```

120

1536

1656

360

300

1716

1776

420

1836

480

1896

540

1956

600

2016

099

2076

720

2136

840

780

2196

900

2256

960

```
1537 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA 1596
                            1417 TOTTGATACCACTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                     AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                     GATCACGGTCAGCTCTAGCACACAGAGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                      1717 recricacadearringaagereergaagacaagrearringeagricarricargaagag
                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1957 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAAAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGAC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACCA
   TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTTCCA
                                                                                               .477 AGITITIGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                      ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCAACAATGCACTAATTCTCAACA
                                                                                                                                                                                                     GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                       GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                        TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCTGAGGACACATTGCAAGCACACAGAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tecteaggacacattecaagcacaaggagagatttctaatgatgtggaagtggagaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGTTTCATACTCATGAGGGGTACATGATGATTTGACAGGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            897 ccadrircaracrcardaggggracardardgarrrgacagcccarcaggccgggrigg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2077 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2437 GCCTGACCTAGCTCCTGGACTGACCACTATTGGAGCCTCTCCTACTCAGACTGTTACTCT
                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATATTTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                    121
                                                                                                                                    181
                                                                                                                                                                                                     241
                                                                                                                                                                                                                                       1597
                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                      1657
                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                         1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2377
   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1079
                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                          g
                                                                                           g
                                                                                                                             ठे
                                                                                                                                                                 g
                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      면
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DP
                                                                ઠે
                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                       2079
GCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGC 2699
                                                                                                                                                                                                                                                                           CCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCT 2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGGAGAGACCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAAC 2259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGGGAGAGAGCCATCTCGCCAAACAAAGAGTGCCTACTATATCAACCACGAGACTCAAAC 2999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTG 2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1416
                                                                                                                    GCAGCCCGTGGGCGATCTCCTTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGC 1959
                                                                                                                                                                                                                     ACTICGAGGAGAAATIGCGCCTCTGAAAGAAACGIGAGCCACGICAAIGACCTIGCTCG 2759
                                                                                                                                                                                                                                                                                                                        GAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGA 2139
                                                                                                                                                                                                                                                                                                                                                        2879
                                                                                                                                                                                                                                                                                                                                                                                          Addocarcadedactringerccaecarcreacactrirerrecaecarcreacaecrec 2939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTIGCTGGGACCATCCCAAAATGACAGGCTCTACCAGTCTTTAGCTGACCTGAATAA 2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                     ACTICGAGGAGAAATIGCGCCTCTGAAAGAAAAGAACGTGAGCCACGTCAATGACCTTGCTCG
                                                                                                                                                                                                                                                       CCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCT
                                                                                                                                                                                                                                                                                                                                                   GAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND U
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver: 2.1
SEQ ID NO 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 4966;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ·.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2250; DE
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTGGATCTCTTGAGCCTGTCA 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTGGATCTCTTGAGCCTGTCA 3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 28, Application US/09845416
Publication No. US20030171312A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 94.5%;
Matches 2401; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Homo sapiens
US-09-845-416-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 4966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -09-845-416-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1357
                   2520
                                                  1840
                                                                                    2580
                                                                                                                  1900
                                                                                                                                                    2640
                                                                                                                                                                                     1960
                                                                                                                                                                                                                     2700
                                                                                                                                                                                                                                                       2020
                                                                                                                                                                                                                                                                                      2760
                                                                                                                                                                                                                                                                                                                        2080
                                                                                                                                                                                                                                                                                                                                                        2820
                                                                                                                                                                                                                                                                                                                                                                                          2140
                                                                                                                                                                                                                                                                                                                                                                                                                          2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3120
                                                                                                                                             g
                 엄
                                                ઠ
                                                                              셤
                                                                                                                  ò
                                                                                                                                                                                     ठ
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωp
```

1020

Db 3577 GAACACCAGATGGAAGCTTTTGCAGCGTCGAGGACCGAGCTCAGGCAGCTGA 3636 Qy 2140 AGCCCACAGGGACTTTGGTCCAGCATCTTTTTTTTTTCCAGGTCC 2199 B 5377 AGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTTTTTCCAGGTCT 3696 Qy 2200 CTGGGAAGAGACTTTGGTCCAGCATCTCAGCACTTTTTTCCACGTCTGTCCAGGGTC 3696 Db 3597 CTGGGAAGAGACCATCTCGCCAAACAAAGTGCCTACTATATCAACCACGAGATCAAC 2319 Db 3757 AACTTGCTGGACACACAAAATGACAGAGCTCTACAGTCTTTAGCTGAATAA 2319 Db 3757 AACTTGCTGGACCATCTCAGCAGAATGACAGAGCTCTACAGTCTTTAGCTGAATAA 3816 Qy 2280 TGTCAGATTCTCAGCTTATAGAACTGCAAAAAAA 3816 Qy 2380 TGTCAGATTCTCAGCTTATAGGACCTCTACCAGAACTGCAAAAA 3816 Qy 2380 TGTCAGATTCTCAGCTTATAGGACCTCTACCAGAACTGCAAAAAA 3816 Db 3817 TGTCAGATTCTTAGGCTGTATAGGACTCTAGAAAAACTGCAAAAAAAA	RESULT 7 US-09-845-416-34 i Sequence 34, Application US/09845416 ; Publication No. US20030171312A1 ; GENREAL INFORMATION:	Dest Match Best Local Similarity 94.5%; Pred. No. 0, Matches 2401; Conservative 0; Mismatches 0; Indels 141; Gaps 1; Best Local Similarity 94.5%; Pred. No. 0, Matches 2401; Conservative 0; Mismatches 0; Indels 141; Gaps 1; Oy 121 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA 1440 Db 1441 TGTTGATACCACTATCCAGATAAGAAGTCCATCTTAATGTACATCACTCTTCCA 1500 Oy 121 AGTTTTGCCTCAACAAGAGAGATAAGAAGTCCATCTTAATGTACATCACTCTTCCA 1500 Oy 121 AGTTTTGCCTCAACAAGAGAGATTTAAGATCATCATCAACATCACTCTTCCA 1500 Oy 121 AGTTTTGCCTCAACAAGAGAGAATTTTCAGTTACATCAATAAGTGCCAAGGCC 1560 Db 1501 AGTTTTGCTCAACAAGAAGAACATTTCAGTTACATCAATAAGTGCAAAGTCCAAGGCC 1560 Oy 241 GATCACGGTCAACTAAAGAAGAACATTTCAGTTACATCAAAAGTGCAATTCTCAACA 1620 Oy 241 GATCACGGTCAAGTGAACAAGAGAACATTTCAAATGAATCATCAAAACACAACAGGAACTTTCAAAAGTGAACTAATCTCAAACA 1620 Oy 241 GATCACGGTCAAGAACAAGAGAACATTTCAAAAGTCACTCAAAACTCAAACACAACAGAAACTTCAAAAGTGAACTAAAGTCAACAAGAGAACATTTCAAAAGTAAACTCAAAAGTCAACAAGAAAACTTCAAAAGAAAAAAGTAACAAAAGAAAAAAAA
2497 GGTGACCACCTGTGGTTACTAAGGAAACTGCCATCTCCCAAACTAGAAATGCCATCTTC 2556 1079ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAA 1119 2557 CTTGATGTTGGAGGTACCTACTAGATTACTGCAACAGTTCCCCTGGACCTGGAAAA 2616 1120 GTTTCTTGCCTGGCTTACAGAAGCTGAACAGCTCCAAGGATCTACAGGACTGGAAAA 2616 2617 GTTCTTGCCTGGCTTACAGAAGCTGAACAGCTCCAATGTCCTACAGGATGCTACCCG 1179 2617 GTTCTTGCCTGGCTTACAGAAGCTGAACAACTGCCAATGTCCTACAGGATGCTACCCG 2676 1180 TAAGGAAAGGCTCCTAGAAGCTGAACAACTGCCAATGTCCTACAGGATGCTACCCG 2676 1240 GTTCTTGCCTGGCTTACAGAAGCTCAAAGAGCTAACAAGAACAACAAGAACAGCAAGA 2736 1240 CCTCCAAGGTGAAATTGAAGCTCACAGAGGATTAACAACTGATGAAAACAACACTGATGAAAACAACACCAAGAACACCAAGAACACCCAAGAACACCCAAGAACACAGATGTTTATCACAACTTGATACAAAACAACCCAAGACCAAGAACACCAAGAACACAGATGTTTATCACAACACTGATGAAAAACACCAAGAACACAAGAACACCAAGAACACAAGAACACAAGAACACCAAGAACACAAGAACACAAGAACACAAACAAC	1360 TAACATGAACTTCAAGTGGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATT 1419 1420 1411 1420 1430	1660

960

1619

1078

```
GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .740 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1860 GGGCAAACTGTATTCACTCAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1919
.260 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1319
                                                                                                                                                                                         1440 eccretriceacerdarerraaagaceraaaaceeeaagracaacaraaaaaagacerrea
                                                                                                                                                                                                                                                                                                                                                                      2040 AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACAG
                                                                                                                                                                                                                                                                                        TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                          1800 ATCAAGTCTTCAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ccaaaaaarccrigaarccriggaaggriccgargargcagrccrgrracaaagacgrrr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1680 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----ACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1980 ACTIGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGGGTAAAAAGAGCTGATGAAACAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITGGAAGCCAGIICIGACCAGIGGAAGCGICIGCACCIIITCICIGCAGGAACTICIGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITGGAAGCCAGITCIGACCAGIGGAAGCGICTGCACCTITCTCTGCAGGAACTICTGGT
                                                                                                                                                                                                                         AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGAC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .920 CCAGAAGACGGAAGCAIGGCIGGATAACITIGCCCGGIGIIGGGAIAAITTAGICCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGTTTCTTGCCTGGCTTACAGAAGCTGAAACAACTGCCCAATGTCCTACAGGATGCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGTAAGGAAAGGCTCCTAGAAGACTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA
                              TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                    TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                             GAAAGAATTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                           1380 (
                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                                      1560
                                                                                                                                                                                                                                                                                                                                                     1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2340
                                                                                                                                                                                                                                                                                                                                                                                                                  1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1357
                                                                                                                                                                                                                                                                                        196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1079
                                721
                                                                                               781
                                                                                                                                                                                                                         901
                                                                                                                                                            841
                                                                                                                                                                                     g
                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원 성 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          868686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                         \delta
                                                        g
                                                                                           ઠ
                                                                                                                     원
                                                                                                                                                     ö
                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1140 CCAGTTTCATACTCATGAGGGGTACATGATTTTGACAGCCCATCAGGGCCGGGTTGG 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 GAGCTATGCCTACACACACACACCTATGTCACCACCTCTGACCTACACGGAGCCCATT 360 900 GAGCTATGCCTACACACACACACACTATGTCACCACTCTGACCTACACGGAGCCCATT 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720 AGITITIGCCTCAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAATGTIGCCAAGGCC 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 GATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTITIGCCICAACAAGIGAGCAIIGAAGCCAICCAGGAAGIGGAAAIGTIGCCAAGGCC 180
                                                           Sequence 2, Application US/09845416
Publication No. US20030171312A1
GENERAL INFORMATION
TITLE OF INVENTION: THEREOF
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 2
LENGTH: 4182
TYPE: DNA
TYPE: DNA
TYPE: DNA
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                           600 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1020 IGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGGACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .080 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 IGAAGTAAACCIGGACCGTIAICAAACAGCTIIAGAAGAAGIAITAICGIGGCTICTITC
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    Indels 324;
                                                                                                                                                                                                                                                                                                                                                                  Length 4182;
                                                                                                                                                                                                                                                                                                                                                                  Score 2067; DB 10;
Pred. No: 0;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 88.1%;
Matches 2401; Conservative
                                                                                                                                                                                                                                                                                                                                       15-09-845-416-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \geq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ત્ર
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             સ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \gtrsim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ※ 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            હ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⋩
```

1176

2159

1356

US-09-845-416-27

Sequence 27, Application US/09845416

Sequence 27, Application US/09845416

Publication No. US20030171312A1

GENERAL INFORMATION:

APPLICANT: XIAO, XIAO

TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE

```
1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1537 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA 1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCACGGTCAGTCTAGCACAGGGATATGAGAAACTTCTTCCCCTAAGCCTCGATTCAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1477 AGTÍTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1657 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1357 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 AGTITIGCCICAACAAGIGAGCATIGAAGCCAICCAGGAAGIGGAAAIGIIGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCAAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1597 GATCACGGTCAGTCTAGCACAGGGATATGAGGAACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1777 igaagiaaacciggaccgiiaicaaacagciiiragaagaagaaiiairacciggciictiic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1837 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGAAGGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGITICATACICATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2017 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            Indels 324;
                                                                                                                                                                                                                                                                                                                                                         Length 5149
                                                                                                                                                                                                                                                                                                                                                                                                            ô
                                                                                                                                                                                                                                                                                                                                                         DB 10;
                                                                                                                                                                                                                                                                                                                                                   Score 2067; DE
Pred. No. 0;
0; Mismatches
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
FRICK RAPLICATION NUMBER: 60/200,777
FRICK RAPLICATION NUMBER: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFWARE: Patentin Ver. 2.1
LENGTH: 5149
                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 88.1%;
Matches 2401; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
```

1597 ACCTIGNATION CONTROL	RESULT 10 US-10-149-736-41 i Sequence 41, Application US/10149736 publication No. US20030216332A1 GENERAL INFORMATION: APPLICANT: Chamberlain, Jeffrey S. TILLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences FILE REFRENCE: UM-06968 CURRENT FILING DATE: 2002-06-17 PRIOR APPLICATION NUMBER: PCT/US01/31126 PRIOR FILING DATE: 2001-10-04 PRIOR FILING DATE: 2000-10-06 PRIOR FILING DATE: 2000-10-06 NUMBER OF SEQ ID NOS: 96
81 GCCTCTTGGACCTGATCTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA	1357 GGATAACATCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCA 1416

```
1098
                                                                                                                                                                                                                       1158
                                                                                                                                                                                                                                              1218
                                                                                                                                                                                                                                                                        1278
                                                                                                                                                                                                                                                                                                1338
                                                                                                                                                                                                                                                                                                                                                 1458
                                                                                                                                                                                                                                                                                                                                                                          1518
                                                                                                                                                                                                                                                                                                                         1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1620
                                                                     7
                                                                                            858
                                                                                                         120
                                                                                                                      918
                                                                                                                                  180
                                                                                                                                              978
                                                                                                                                                                                   300
                                                                                                                                                                                                           360
                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                     999
                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                               840
                                                                                121 AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                          919 AGTITIGCCTCAACAAGTGAGCCATTGAAGCCATCCAGGAAGTGGAAAATGTIGCCAAGGCC
                                                                                                                                                                                 361 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAAGACAGA
                                                                                                                                                                                                                                                                  TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                           CCAGITICAIACTCATAGAGGGTACAIGAATITGACAGCCCAICAGGGCCGGGITGG
                                                                                                                                                                                                                                                                                                                       1339 CCAGITICATACTCAIGAGGGTACATGATGGATTTGACAGCCCATCAGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                     721 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTATTGGAGCCTCTCCTACTCAGACTGTTACTCTGGTGACACAACCTGTGGTTACTAA
                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                     TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                           ------AC
                                                                                                                                                                                                                                                                                                                                                                                                              GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                     Gaps
                                                       Query Match 76.6%; Score 1839.4; DB 15; Length 5462; Best Local Similarity 88.1%; Pred. No. 0; Matches 2115; Conservative 0; Mismatches 76; Indels 210;
                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATGCTCCTGGACTG
; SOFTWARE: Patentin version 3.1; SEQ ID NO 41; LENGTH: 5462; TYPE: DNA ORGANISM: Artificial Sequence; PRATURE: PRATURE: OTHER INFORMATION: Synthetic US-10-149-736-41
                                                                                                                    859
                                                                                                                                                                                                                                                                        1219
                                                                                                                                                                                                                                                                                                            541
                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                          1459
                                                                                                                                                                                                                                                                                                                                                                                                  1519
                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                   q
                                                                                           a
                                                                                                         à
                                                                                                                                  à
                                                                                                                                           a
                                                                                                                                                       \dot{\delta}
                                                                                                                                                                    임
                                                                                                                                                                               중 원
                                                                                                                                                                                                       8 6 8 6
                                                                                                                                                                                                                                                        않 음
                                                                                                                                                                                                                                                                                  8 8 8
                                                                                                                                                                                                                                                                                                                      4 7 4
                                                                                  ਨੇ
                                                                                                                                                                                                                                                                                                                                                           ≈ ≈ ≈
                                                                                                                                                                                                                                                                                                                                                                                              성 >> 성
```

≥	901	\TCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCAC
. ہ	21	1 1
<u>></u> .	961	TGATGAATCTAGTGGAGGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1020
۾	1670	1669
≿	1021	AGATGGACAGAAGACCC
ą	1670	1669
≱:	1081	TTTCTT
ð	1670	CCCTGGACCTGGAAAGTTTCTTGCCTGC
<u>≯</u> .	41	ō
စ္	6	SAAACAACTGCCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGA 178
<u>≽</u> •	1201	CTCCAAGGGAGTAAAAGAGCTGATGAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 1280
<u>≽</u> ,	1261	ACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCTGG
٩	1849	TCACACAGAIGITTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCTGGA 1908
ب ج	1321	
	5 6	0 0 0 0 0 0 0 0 0 0
<u>ب</u> و	1961	TGARCTICGGARARAGICTCICARCATIAGGICCCATTIGGARGCCAGITCTGACCAGIG 14*0 TGARCTICGGARARAAGTCTCTCAACATTAGGTCCCATTIGGARGCCAGTTCTGACCAGIG 2028
Ž.	1441	GAAGGGTCTGCACCTTTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGA 1500
ą	2029	GTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTG
ž	1501	ATTANGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAAGC
۾	2089	ATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT 2148
<u>۲</u> ح	61	ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA 1620
Ω	4 (7 7 7
<u>م</u> ج	1621	GACTUTACGAATATTTCTGAAGAGAGCCTTTGGAAGAGTTGGAAACTCTACCAGGA 1880
.~	1681	Н
Д	2269	32
~	1741	TIGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGG 1
Q	2329	238
۶	801	AATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 186
.a	2389	TTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 244
*	861	9
Ω	449	GCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCT 250
۶.	1921	ω ω
Д	2509	TCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGC
*	1981	TCTGAAAGAAGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2040

241	y 301 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCAT.	y 361 TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTTGGCAGATCATTTGGTGGAGA 	4 2 4 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	10 4 4 B	1	601	y 661 pactgaagtacaagagcagatgaatctcctaaattcaagatgggaatgcctcagggtagc b 1260 pactgaagtacaagagcagatgaatctcctaaattcaagatgggaatgcctcagggtagc	y 721 TAGCATGGAAAAGCAATTTACATAGGGTTTTAATGGATCTCCAGAATCAGAACT 	y 781 gaaagagttgaatgactggctaacaaaaacagaagaagaacaaggaaaaa	1351		b 1351	1351	y 961 TGATGAATCTAGTGGAGATCACGCAACTGCTGTTGGAAGAACAACTTAAGGTATTGGG	b 1351		1351	b 1353 TCATAGATTACTGCAACAGTTCCCCCTGGAACAGTTTCTTGC	y 1141 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGG	y 1201 CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC	y 1261 TCACACAGATGTTTATCACAGCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA	1533	1321
<i>></i> 원	8 %	 & 4	3 8 8	3 & A	\	3 & A	₩ 43	<i>ે</i> વ	ð	අය	à	A &	· 음	δ	<u>අ</u>	8 8	a 2	장 옵 	& ₽ 	8 &	ò	음 à	δ; -
& O		0 60		0 8	0 8	0 8																	
262	TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT	2101 GCAGGTGGCCGTCGAGGCCGAGTCAGGCAGCTGCATGAAGCCCACAGGACTTTGGTCC 2160 2689 GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGACTTTGGTCC 2748	2161 AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGCCATCTCGCC 2220	2221 AAACAAAGTGCCCTACTATATCAACCACGAGACTCÁAACAACTTGCTGGGACCATCCCAA 2280 	2281 AATGACAGAGCTCTACCAGTCTTTAGCTGAQTAGATAATGTCAGATTCTCAGCTTATAG 2340 1	2341 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2400	2401 A 2401 2989 A 2989	RESULT 11 US-09-845-416-10 ; Sequence 10, Application US/09845416	ublication No. US20030171312A1 ENERAL INPORMATION: APPITCANT: XTAO. XTAO.	TITLE OF INVENTION: DAM SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: THEREOF	FILE REFERENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416	CURRENT FILING DATE: 2001-04-30 PRICA APPLICATION NUMBER: 60/200,777	NUMBER OF SEQ ID NOS: 36 ; NUMBER OF SEQ ID NOS: 36 ; SOFTWARE: Patentin Ver. 2.1	SEQ ID NO 10 LENGTH: 3531 TYDER: DAR	ORGANISM: Homo sapiens	uery Match 72.3%; Score 1737; DB 10; Length 3531;	<pre>Best Local Similarity 86.4%; Pred. No. 0; Matches 2074; Conservative 0; Mismatches 0; Indels 327; Gaps 1</pre>	1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA 60	ACTCTTCCA 12	1611GATACCACCTATCCAGATAGAGAGTCCATCTTAATGTACATCATCATCACTCTTCCA 71 AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGAGCC 18	720 AGITITGCCICAACAAGIGAGCAITGAAGCCAICCAGGAAGIGGAAAIGITGCCAAGGCC 779 181 ACCTAAAGIGACTAAAGAAGAAGATTTTCAGTTACATGAAGAAGACHATTGAAGA 240		

셤

a y

ઠે

셤

ò

g &

8 8

g &

ठे

8

8 6 8 6 8 6 8 6 8 6 8 6 8 6

ર્જ

```
1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1417 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACATCTCCA 1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1537 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAGAGGACTATTCTCAACA 1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1597 GATCACGGTCAGGCACAGAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAA 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1657 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1717 recricacacaringgaagerecreaagacaagrearinggeagricaringargaaga 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1477 AGTITITGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACACACACTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241 GATCACGTCAGTCTAGCACAGGGATATGAGAGCATCTTCTTCCCCTAAGCCTCGATTCAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 AGITITIGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGAGGACACATTGCAAGGAGAAGAATTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTITICATACTCATGAGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1777 IGBAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGTITCATACTCATGAGGGGTACATGATGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                             Sequence 30, Application US/09845416;
Sequence 30, Application US/09845416;
Publication No. US2033171312A1
GENERAL INFORMATION:
APPLICANT: XIAO, XIAO,
TITLE OF INVENTION: THEREOF
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT APPLICATION NUMBER: 60/200,777
PRIOR PRICE APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE PRECENTIN Ver. 2.1
SEQ ID NO 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 4498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Score 1737; DE; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 72.3%;
Best Local Similarity 86.4%;
Matches 2074; Conservative
                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
CORGANISM: Homo sapiens
US-09-845-416-30
2673 A 2673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            요 상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2672
                                                          1440
                                                                                              1712
                                                                                                                                                                                                                   1560
                                                                                                                                                                                                                                                                                            1620
                                                                                                                                                                                                                                                                                                                                                                            1680
                                                                                                                                                                                                                                                                                                                                                                                                                1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2400
                                                                                                                                        1500
                                                                                                                                                                           1772
                                                                                                                                                                                                                                                                                                                                    1892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1741 GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG 1800
TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                                                                                                                                                                                                                                                        1833 ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTTGA
                                                                                                                                                                                                                                                                                                                                                                          1621 GACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1953 GCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACCGGCTTCTACGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1801 AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGACCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCATCTCAGGACTTTCTTTCCACGTCTGTCTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGACAGAGCICTACCAGICTITAGCIGAACAGAATAAIGICAGAITCICAGCITAIAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2613 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC
                                                            TGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG
                                                                                                                                                                         1713 GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGATGA
                                                                                                                                                                                                                 ATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
                                                                                                                                                                                                                                                                                               ACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                1893 GACTGTACGAATATTTCTGACAGCAGCCTTTGGAAGGACTAGAGAACTCTACCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCAGAGAGCTGCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cerchádergegechadergaggrehrehadaggarecregendergegegarerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rengaaagaacengaceacercangacerrecerceceacerracerreceacerraceacerre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2313 TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2493 AAACAAAGIGCCCTACTATATCAACCACGAGACTCAAACAACTIGCTGGGACCATCCCAA
                                                                                                                                      GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGGCCTACAGCTGAAGATGATGA
                                                                                                                                                                                                                                                       1773 ATTAAGCCGGCAGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGGCGATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2401 A 2401
                       1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2133 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2341
                                                                                                                                                                                                                                                                                                 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2221
                                                              1381
                                                                                                  1653
                                                                                                                                          1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2101
                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1921
```

DD 2770 GGCTGAGGAGGTCATTACTGAGTGSCAAMATTGAACTGCACTCCGCTGACTGAGGCAGG 2829 1801 AAAAATACAATGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 2889 OY 1861 CCTCCAAGCTGCCCCTAGAACTCCAGGAACTTCAAGAGCCACGGATGAGCTCCT 1920 DD 2880 CCTCCAAGCTGCCCCAAGCTGAACTCCAGGAACTTCCAGGAGCCACGGATGAGCTCCT 2949 1911 CATTGAACTCTCTCCAAGTTGACTCAAGAACTCAAGGCACTTCGAGGACAATTTCGCC 3049 1921 CATTGAAAGAACTGAGTGACTCAAGAACTCAAGGCACTTCGAGGAAAATTCGCC 3049 1921 CATTGAAAGAACTGAGTGACCAGAATCAAGGCACTTCGAGGAAAATTCGCC 3049 1921 CATTGAAAGAAAATAAATCAAGATCAAGAACTCAAGAGCACTTCGAGGAAAATTCGCC 3049 1921 CATTGAAAGAAACTCCAGAATCAACTCAAGAAACTCAAGAAAAATTCAAGAAAATTCAAGAAAAAAAA	RESULT 13 US-10-149-736-40 i Sequence 40, Application US/10149736 j Publication No. US20030216332A1 i GENERAL INFORMATION: APPLICAMTON: APPLICAMTION: APPLICAMTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences TILE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences TILE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences TILE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences TILE OF INVENTION: WINDER: US/10/149,736 CURRENT PILING DATE: 2001-00-06 PRIOR PAPLICATION NUMBER: 60/238,848 PRIOR FILING DATE: 2000-10-06 NUMBER OF SEQ ID NOS: 96 SOFTWARE: ParentIn Version 3.1 SEQ ID NO 40 IENGTH: 5339 TYPE: DNA ORGANISM: Artificial Sequence FEATURE: CTHER INFORMATION: Synthetic US-10-149-736-40 Query Match 71.8%; Score 1725; DB 15; Length 5339;
	1381 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG

1546	TCACACAGATGTTTATCACAACGAGGAAAAAACAGCCAAAAATCCTGAGATCCTGGA 	1321 AGGITCCGAIGAIGCAGTCCTGITACAAAGACGITIGGATAACAIGAACTICAAGIGGAG 1380			ATTAAGCCGGCAGGCACTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGT ACATAGGGCCTTCAAGAAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTTTGA	2020 ACAIAGGGGCCIICANGAGGGGANIIGAAAACIMAAGAACCIGIAAIGAIGAGIACICIIGA 2083 1621 GACTGTACGAATATTCTGACAGAGCCATTGGAAGGACTAGAGAACTCTACCAGGA 1680 1680	1681 GCCCAGAGAGCTGCCTCCTGAGAGAGACCCAGAATGTCACTGGCTTCTACGAAAGCA 1740	1741 GCCTGAGGAGGTCAATACTGAGGAAAAATTGAACCTGCACTCGCTGACTGGCAGAG 1800 1741	1801 AAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 1860 	1861 CCTCAAGCTGCGCCAAGCTGAAGTGATCAAGGGATCCTGGCAGCCGGTGGGCGATCTCCT 1920 2326 CCTCAAGCTGCGCCAAGCTGATCAAGGGATCCTGGCAGCCGTGGGCGATCTCCT 2385	1921 CATTGACTCTCCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 1980	1981 TCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2040 2446 TCTGAAAGAAACGTCAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2505	2041 TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT 2100	GCAGGTGGCCGTCGAGGCCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC 2
4 6 4 6 4 6	S & G	∂ 8 8	5 A &	କ ୪	q XX	8 & 8	\$ 8 8	& g	<i>8</i> €	O, Pb	& 8 ————————————————————————————————————	ර් සි	& €	- 6y da
Best Local Similarity 86.1%; Pred. No. 0; Matches 2068; Conservative 0; Mismatches 0; Indels 333; Gaps 1; Oy 1 ACATGCATTCAACATCGCAGATATCAATAGGCATAGAGAAACTACTCGATCCTGAAGA 60 Typy ACATGCATTCAACATCGCAGATATAGGCATAGAGAAACTACTCGATCCTGAAGA 858 Oy 61 TGTTGATACCACCTATCCAGATAAGAGACTCTTAATGTACATCCACTCTTCCA 120 Db 859 TGTTGATACCACCTATCCAGATAAGAGAGCCATCTAATGTACATCACATCACTCTTCCA 318 Oy 121 AGTTTGATACCACCAATAAGAGAGCCATCAGGAAATGTTGCCAAGAGCC 180	Db 919 AGTTTTGCCTCAACAAGTGAACATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 978 Qy 181 ACCTAAAGTGACTAAAGAACATTTCAGTTACATCAACAACACACAC	241	301 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCCTTGACCCTACACGGAGCCCATT	361 TCCTTCAGGATTTGGAAGGTCCTGAAGACAGTCATTTGGCAGTTCATTGAGAGAG 	OY 421 IGAACTBAACCTGTATCAACAGCTTTAGAAGAATATTATCGTGGCTTCTTTC 480	1279 IGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAGTGGTGAAGAAGAAGA CACAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGA	Db 1339 CCAGTITCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGGTTGG 1398 Qy 601 TAATATTCTACAATTGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 660 Db 1339 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGAAAATTATCAGAAAATAAAA 1458	661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC	721 TAGGATGGAAAAAGAAAGGAATTTACATAGATTTAATGGATCTCCAGAAACGAAACGAAACTAGAGAATTTACATAGAGTTTTAATGGATCTCCAGAAACGAAACGAAATTAAAAACAAAGAAATTAAAAAACAAATTAAAAAAAA	781 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAAGAA	1546	1546	Db 1546	Db 1546

5 16:30:05 2004

Mon Apr

Db 960 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAGAG 1019 Qy 421 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 480 Db 1000 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 480	481 TGCTGAGGACAGTTGCAAGGAGAGAGAGATTTCTAATGATGTGGAAGTGAAGGAGAGTGAAAGA 540 1080 TGCTGAGACACATTGCAAGCACAAGAGAGAGATTTCTAATGATGTGGAAGTGAAAGA 113	541 CCAGTITCAIACICAIGAGGGGAACAIGAIGGAITGACAGCCCAICAGGGCCGGGITGG	QY 601 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGAGA 660 Db 1200 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1259	Qy 661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 720	OY 721 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 780 1320 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1379	QY 781 GAAAGAGTTGAATGACTGGCTAACAAAAAAGAAGAAAGAA	Qy 841 GCCTCTTGGACCTGATCTTGAAGACCTAAAAGGCGAAGTACAACAACAAGAGGTGCTTCA 900	Qy 901 AGAAGATCTAGAACAAGAAGAGGTCAAGGTCAATTCTCTCACATGGTGGTGGTAGT 960	OY 961 TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1020	QY 1021 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGTTCTTTTACAAGACAC 1080 1021 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGA 1676	Qy 1081 TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGA 1140 Db 1677 1676	1141 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCGGTAAGGAAAGGCTCCTAGAAGA	Db 1677 1676 Oy 1201 CTCCAAGGAGATAAAAGAGCTGAAAAGAGCTGAAAAGAGCTGAAAATGGAAGAGTAAAAGAGC 1260	1677	QY 1261 TCACACAGATGTTTATCACAACCTGGATGAAAACAGCCAAAAAATCCTGAGATCCCTGGA 1320 Db 1677	Qy 1321 AGGITCCGAIGAIGCAGICCIGITACAAAGACGTITGGAIAACAIGAACITCAAGIGGAG 1380 Db 1677 1676	Oy 1381 TGAACTTCGGAAAAGTCTCTCAACATTAGGTCCCATTTGSAAGCCAGTTCTGACCAGTG 1440 Db 1677CAGTTCTGACAGTG 1691	GAAGCGTCTGGACCTTTTCTCTGCAGGAACTTTTGGTGTGGCGCTACAGCTGAAAGATGATGA
AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC 2220			GACTOCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGCATCCTTGAGCCTGTC 2400		ion US/09845416	PUBLICATION NO. USZUCJJII151ZA1 APPLICANT: XIAO, XIAO TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	FILE OF REPRENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30	PRIOR APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1	LENGTH: 3510 TYPE: DNA ORGANISM: Homo sapiens	10.6%; Score 1695; DB 10; Length 3510; Larity 85.5%; Pred. No. 0; Concernative M. Mismatches 0. Indels 348. Gans 1.	CTGAAGA 60	ACAIGCATTCAACATCGCCAGATATCAATTAGGGATAGAGAAACTACTCGATCCTGAAGA 659 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA 120	TCTTCCA 7	AGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC 180	CTCAACA	GATTCAA	GATTCAA 8 GCCCATT 3	GAGCTATGCCTACACAGGCTGCTTATGTCACCTCTGACCCTACACGGAGCCCATT 959 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGG 420

us-09-845-416-9_copy_600_3000.rnpb

ë	The most and a set a set a set a set a set and set of set of the set of set of the set of set	, TITLE OF
à c		CURRENT
QQ		; CURRENT
à	1561 ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA 1620	
qq	1812 ACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA 1871	
ò	1621 GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA 1680	
QQ	1872 GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA 1931	; TYPE: Di ; ORGANISI
ò	1681 GCCCAGAGAGCTGCCTCGAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA 1740	US-09-845-4
		Query Mat
	らくてくからなるできなく こうさんし しゅうしょう はんしん こうしん こうしん こうしん こうしん ないしん しょうしん しょくしん しんしん しょくしん しょくしん しんしん しん	Matches 2
λō	1741 GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAG 1800	ò
ch Ch	1992 GGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCGCTGACTGGCAGAG 2051	
ζŏ	1801 AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 1860	
Q O	2052 AAAAATAGATGAGACCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 2111	
ò	1861 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCGTGGGCGATCTCCT 1920	DD 14:
; <u>8</u>	CCTCAAGCTGCGCCAAGCTGAAGTGAACAAGAGAACCTGGCAGCCGTGGGCGAACTCTTT	Oy.
į		Db 14
3 1		20,
a a	2172 CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 2231	. dg
δ	1981 TCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2040	
qq	2232 TCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2291	
ò	2041 TCAGCICICACCGTATAACCICAGCACICIGGAAGACCCAGAIGGAAGGITCT 2100	Db 159
	TOPIC COLORDADA CONTRACTOR CONTRACTOR CONTRACTOR AND CONTRACTOR AN	Oy 3(
	**************************************	Db 16
	1	36
අධ	2352 GCAGGTGGCCGTCGAGGACCGAGGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC 2411	7.t
ζŏ	2161 AGGATCTCAGGACTTTCCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGA	
Db	2412 AGCATCTCAGCACTTTCTTTCCACGCTCTCTCTGCTGCAGAGAGAG	Oy 4,
è		Db 17.
		Oy 48
	AMACAMAGIGUUU IALIAIAI WAAUUAUGAGAUI WAAAAAAA II GOOGGAAUAAA 253	Db 183
à	2281 AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG 2340	,s
q	2532 AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG 2591	•
γο	2341 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2400	
qq	2592 GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2651	δλ (0
λO		Db 199
	- A	. vo
	C07 W 70	Db 20:
1		

Sequence 31, Application US/09845416
; Publication No. US20030171312A1
; Publication No. US20030171312A1
; Publication No. US20030171312A1
; APPLICANT: XIAO, XIAO
; TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE

RESULT 15 US-09-845-416-31

```
1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1595
                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 476 AGITITIGCCICAACAAGIGAGIGAITIGAAGCCAICCAGGAAGIGGAAAIGTIGCCAAGGCC 1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   656 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    776 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           836 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                           1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                356 ACAIGCAITCAACAICGCCAGAIAICAAITAGGCAIAGAGAAACIACICGAICCIGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 AGTITTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATCACGGTCAGCTCTAGCACAGGGATATGAGAGACTTCTTCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 IGAAGTAAACCIGGACCGTIATCAAACAGCITTIAGAAGAAGTATTATCGIGGCTTCTTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        956 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     016 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2076 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                   0; Indels 348;
                                                                                                                                                                                                                                                                                                       Length 4476;
                                                                                                                                                                                                                                                                                                          DB 10;
                                                                                                                                                                                                                                                                                                       tch
al Similarity 85.5%; Pred. No. 0;
2053; Conservative 0; Mismatches
OF INVENTION: THEREOF
REFERENCE: DE1142
NT APPLICATION NUMBER: US/09/845,416
NT FILING DATE: 2001-04-30
. APPLICATION NUMBER: 60/200,777
. FILING DATE: 2000-04-28
.R OF SEQ ID NOS: 36
                                                                                                                                                                                                                                          SM: Homo sapiens
416-31
                                                                                                                                                                                                 4476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठ
```

911 GCCCCTGGACCTGATCTTGAAGACCTAAAACCCCAACACATAACACATAACACATAACACTCCA 2255 2196 GCCCTTGGACCTCTGAAGACCTTAAAACCCCAACATAACACATAACACTCCACACATAACACTCCACCCCCC	γς ————————————————————————————————————	AG -		λο 	<i>∂</i>		ි සි	70	qq	<i>ò</i> ; ——	q _Q		qa 	S S S S S S S S S S S S S S S S S S S				4,				
	841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAAAAAGGTGCTTCA 900 	AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGTGGTGGTAGT 960	TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGG 102 	AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAC 108	TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA 114	3 243	AGCTGNAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGNAGA 120	243	CTCCAAGGGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGC 126	3	3	AGGITCCGAIGAIGCAGICCIGITACAAAGACGITIGGAIAACAIGAACITCAAGIGGAG 138	3 243	1 TGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTG 144	441 GAAGGEGTGCACCTTTCTCTGCAGGAACTTCTGGTGGGCTACAGCTGAAAGATGATGA 150 	501 ATTAAGCCGGCAGGCACTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAAGGATGT 156 	561 ACATAGGGCCTTCAAGAGGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGA 162 	GACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGGA 168	GCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCA 174 	GGCTGAGGAGGTCAAIACTGAGTGGGAAAAAITGAACCTGCACTCCGCTGACTGGCAGAGGGGGGGGGG	801 AAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGA 18 	861 CCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGTGGGGGATCTCCT 192

ჯ ფ

λ̈́o	1921	CATTGACTCTCTCCAAGATCACCTCGAGAAGTCAAGGCACTTCGAGGGAAATTGGGCC 1980
qq	2928	CATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCC 2987
ò	1981	TCTGABAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 2040
qq	2988	TCTGAAAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTACCACTTTGGGCAT 3047
ò	2041	TCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAAACACCAGATGGAAGCTTCT 2100
QQ	3048	TCAGCTCTCACCGTATAACCTCAGGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCT 3107
ò	2101	GCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC 2160
DÞ	3108	GCAGGTGGCCGTCGAGGACCCGAGTCAGGCAGCTGCATGAAGCCCACAGGGACTTTGGTCC 3167
ò	2161	AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGCGATCTCGCC 2220
Dp	3168	AGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCC 3227
ò	2221	AAACAAAGIGCCCTACTATATCAACCAGAGACTCAAACAACTTGCTGGGACCATCCCAA 2280
QQ	3228	AAACAAAGGCCCTACTATTATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAA 3287
δ	2281	AATGACAGAGCTCTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCTCAGCTTATAG 2340
qq	3288	AATGACAGAGCICTACCAGTCTTTAGCTGACCTGAATAATGTCAGATTCTCAGCTTATAG 3347
à	2341	GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 2400
q 0	3348	GACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTC 3407
δy	2401	A 2401
ΩĐ	3408	A 3408
Search o Job time	ф ::	leted: April 5, 2004, 16:33:42 622.2 secs

```
BC036103 Homo sapi
AY399453 Homo sapi
AK044536 Mus muscu
AY399455 Mus muscu
                                                                    April 4, 2004, 16:52:43 ; Search time 4197.89 Seconds (without alignments) 17079.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                   US-09-845-416-9_COPY_600_3000
2401
1 acatgcattcaacatcgcca.......tggatctcttgagcctgtca 2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                55026578
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                      27513289 seqs, 14931090276 residues
                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BC036103
AY399453
AX044536
AY399455
                                                                                                                                                                   IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em gss mus: *
em gss pro: *
em gss rod: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     em_gss_vrt:*
em_gss_fun:*
em_gss_mam:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_gss_phg:*
em_gss_vrl:*
gb_gssl:*
gb_gss2:*
                                                                                                                                                                                                                                                      (inimum DB seq length: 0 (aximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_est3:*
gb_est4:*
gb_est5:*
em_estfun:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11
23
11
29
                                                                                                                                                                                                                                                                                                                                                    em_estba:*
em_esthum:*
em_estin:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 %
Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                      em_estmu:*
em_estov:*
em_estpl:*
em_estro:*
em_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_est2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3870
5691
3056
5697
                                                                                                                                                                                                                                                                                                                                           EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45.6
41.4
36.0
32.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1093.8
994.4
864.6
786.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
                                                                                                                     Nitle:
Perfect score:
                                                                                                                                                                    scoring table:
                                                                                                                                                                                                                                                                                                                                           latabase :
                                                                                                                                             sequence:
                                                                                                                                                                                                        searched:
                                                                        sun on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lesult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
8
```

AY399454 Pan trogl BI729851 603349511 CB177816 iS21601.x BI730168 603349711 AL121850 DKFZB762L CB22898 AGENCOURT CB850319 MRA-0070 BM484464 pgm2n.pk0 AK081456 Mus muscu BU311510 600540290 AY408546 Homo sapi AY408548 Mus muscu CB547284 AMGNNUC:S BU70262 HOMO Sapi	AY408547 Pan trog1 BAC011062 Mus muscu AY407024 Mus muscu CT109978 Shultzomi AY407023 Pan trog1 BA2070245 RST32032 CD656896 AGENCOURT AK034383 Mus muscu AL855376 AL855376 B125058 602933659 AL65076 DKFZP313B B1553820 603109072 B1107880 603109072	3 AW46740 W46740 CD5499 B12891 B12891 B12891	mRNA linear HTC 19-NOV-2000 ar dystrophy, Duchenne and Becker 5274415), with apparent retained	Eukaryotani, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 thases 1 to 3870) 2 trausberg, R. L., Feingold, E.A., Grouse, L.H., Derge, J.G., Klausner, R.D., Collins, F.S., Wagner, L., Shenmen, C.M., Schuler, G.D., Altechul, S.F., Zeeborg, B., Buerow, K.H., Schaefer, C.F., Bhat, N.K., Hopkins, R.F., Jordan, H., Moore, T., Max, S. I., Mang, J., Hsieh, F., Diarchenko, L., Maruaina, K., Farmer, A.A., Rubin, G.M., Hong, L., Stapleton, M., Soaree, M.B., Bonaldo, M.F., Casavant, T.L., Scheetz, T.E., Brownstein, M.J., Ugin, T.S., Toshiyuki, S., Carninci, P., Prange, C., Raha, S.S., Loquellano, N.A., Peters, G.J., MocKernan, K.J., Malek, J.A., Guarciane, P.H., Richards, S., Worley, K.C., Hale, S., Garcia, A.M., Gay, L.J., Hulyk, S.W., Villalon, D.K., Muzny, D.M., Sodergren, E.J., Lu, X., Gibbs, R.A., Fahey, J., Helton, E., Ketteman, M., Madan, A., Rodrigues, S.,
4 8 8 4 1 5 6 6 7 7 8 9 7 9 9 7 9 9 9 9 9 9 9 9 9 9 9 9	**************************************	000000000000000000000000000000000000000	70 bp nscul MAGE:	E.A., Wa Buet Dore, Pare, Tar, Tar, Tar, Tar, Tar, Tar, Tar, Tar
AY399 BI729 BI739 BI730 CBB20 CBB50 CBB50 BM48 BM480 BM480 AY400 AY400 AY400 AY400 AY400 AY400 AY400	AKA000 AKA000 AKA000 AKA000 AKA000 AL8553 AL8553 AL8550	AW467	38. in (m) one II	hordal rimatr gold, j g, F.S g, B., Ma, K. Ma, K. Ma, K. Fa, Ma, Garc D.M.,
₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	10104011110101111 101040041	# O 4 0 0 0	roph A cle 2713 an)	a; Cd 700) 111in 111in 111in 111in rusi res; Cd Gge, C 111ah 111ah 11ah 11ah 11ah 12ah 12ah 13ah 13ah 13ah 13ah 13ah 13ah 13ah 13
ためのでたる4ので4ととの4の1	2220110 8200110 8200110 10000000000000000000000000000000	1 4 0 O N 4	s dyst A (cDN GI:23	wetazo utheri to 38 R.L., D., Co F., Core L., Soa ., Soa ., Pran D., Ma J., Ma K., Ma
	4 W W W Y L W W L C W W W W W W W W W W W W W W W		6103 sapien s), mRN on. 6103 6103.1 sapien	ryota; alia; alia; bases bases; usberg; chul,S
	7777799	2007.C.C.	BC03 type intr bC03 BC03 BC03 HTC.	Mammam Mammam Mammam Mammam Mammam Strau Klara Klara Klara Klara Klara Klara Klara Klara Klara Klara Klara Klara Mara Mara Mara Mara Mara Mara Mara
		3 H G W 4 D	NO NO S	PERENCE
0 0		ण च च च च च	RESULT : BC036103 LOCUS DEFINIT: ACCESSIC VERSION KEYWORDS SOURCE COCOMMENT	SFER
			SECTO SERVICE	R B B

S

Mon Apr

1282

540

1342

1402

1462

780

1522

1582

900

840

1702

```
AY399453 5691 bp DNA linear GSS 12-DEC-2003 Homo sapiens HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1583 GCCTCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1763 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1822
                                                                                                                                                                                                                                                               1163 reaagraaaccregaccerrarcaaacagerrragaagaagrarraregregeerrerre 1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Homo sapiens
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
                                                                        1823 ccrrcrcaarggcaacgrcrracrgaagaacacgccrrrrragrgcarggcrrraga
                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                      TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                         1223 TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601 TAATATICTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1343 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1403 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1463 TAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1523 GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACACATGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081 TCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCTTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141 AGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGA 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AY399453.1 GI:39755442
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AY399453
                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
AY399453
                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                8 6
                                                                                                                                  ठ
                                                                                                                                                                      a
                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                    ઇ
                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                       NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help deak
Email: cgapba-r@mail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
Tobhiyuki and Piero Carninci (RIKEN)
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing fortoup at the Stanford Human Genome
Center, Stanford University School of Medicine, Stanford, CA 94305
Web site:
Contect: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grimwood, J., Rodriquez, A., and Myers,
R. M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Series: IRAK Plate: 48 Row: f Column: 7
This clone was selected for full length sequencing because it passed the following selection criteria: Similarity but not identity to protein
This clone has the following problem: retained intron.
Location/Qualifiers
1. 1870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome
CA 94305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                982
Sanchez, A., Whiting, M., Madan, A., Young, A.C., Shevchenko, Y., Bouffard, G.G., Blakesley, R.W., Touchman, J.W., Green, E.D., Dickson, M.C., Rodriguez, A.C., Grimwood, J., Schmutz, J., Myers, R.M., Stalka, J., Sanilus, D.E., Schnerch, A., Schein, J. Skalka, J., Sanilus, D.E., Generation and initial analysis of more than 15,000 full-length Broc. Matl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                       Strausberg,R.

Direct Submission
Submitted (31-JUL-2002) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTTGATACCACCTATCCAGATAAGAAGTCCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGITITIGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTITIGCCICAACAAGIGAGCATIGAAGCCATCCAGGAAGIGGAAAIGTIGCCAAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTAAAGTGACTAAAGAAGATTTTTCAGTTACATCATCAAATGCACTATTCTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCACGGTCAGTCTAGCACAGGGATATGAGAGCACTTCTTCCCCCTAAGCCTCGATTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1093.8; DB 11; Length 3870;
Pred. No. 3.1e-238;
0; Mismatches 57; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/organism="Homo sapiens"
/mol type="mRNA"
/clone="Idaxon:9606"
/clone="Idaxon:9606"
/clone=Tib=NIH MGC 95"
/lab host="DH106"
/note="Vector: pBluescript"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 95.2%;
Matches 1128; Conservative 0
                                                                                                                                                                                                                                                   (bases 1 to 3870)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                        MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                REMARK
COMMENT
                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
```

ORIGIN

ò 셤 셤

ò

g ò d

ò

g

 δ

```
AK044536 MAS musculus adult retina cDNA, RIKEN full-length enriched library, clone:A930019F21 product:dystrophin, muscular dystrophy, full
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Ohaza, K., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKEN integrated sequence analysis (RISA) system--384-format
                                                                                                                                                                                                                                                                                                                           919
                                                                                                                                                                                                                                                                                                                                                                                                                                                  963
                                                                                739
                                                                                                                                                              799
                                                                                                                                                                                                   783
                                                                                                                                                                                                                                             859
                                                                                                                                                                                                                                                                                      843
                                                                                                                                                                                                                                                                                                                                                                  903
                                    663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Sutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964 CACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new 90499374
                                                                                                                                                                                                 <u> aarritacaragagiritraarggarcrccagaarcagaagtgaaagagtrgaargacrgg</u>
                                                                                                                                                                                                                                                                       GAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCAAGAAGATCTAGAACAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                     904 CAAGTCAGGGTCAATTCTCTCACTCACTCAGTGGTGGTAGTTGATGATCTAGTGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGGAGATCGATGGGCAAACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGATTACTGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTCAGGGTCAATTCTCTCACTCACATGGTGGTGGTAGTTGATGAATCTAGTGGAGAT
AGTAAGCTGATTGGAACAGGAAATTATCAGAAGAAGAAAAACTGAAGTACAAGAGCAG
                                                                                                                                                              AATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGG
                                                                                                                                                                                                                                             CTAACAAAAACAGAAGAAGAACAAGGAAATGGAGGAAGAAGAGCCTCTTGGACCTGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carninci, P. and Hayashizaki, Y.
High-efficiency full-length cDNA cloning
Weth. Enzymol. 303, 19-44 (1999)
99279253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTC, CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AK044536.1 GI:26090404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1100 TICCCCTGGACCTGG 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1084 CTTACTGAAGACAGG 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   insert sequence,
AK044536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .0349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11042159
                                                                                    089
                                                                                                                         664
                                                                                                                                                                   740
                                                                                                                                                                                                        724
                                                                                                                                                                                                                                                                                                                               960
                                                                                                                                                                                                                                                                                                                                                                                                                920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                980
                                                                                                                                                                                                                                                 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AK044536
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
MEDLINE
PURMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                               원
                                                                                                                                                                                                                                             ે
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                  g
                                                                       8
                                                                                                                 g
                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACAAGGAGAGATTTCTAATGATGTGGAAGTGAAAGACCAGTTTCATACTCATGAG 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATAAGAAGICCAICTIAAIGIACAICACAICACTICCAAGITIIGCCICAACAAGIG 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATAAGAAGTCCATCTTAATGTACATCACATCACTTTTCCAAGTTTTTGCCTCAACAAGTG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCCACCTAAAGTGACTAAAGAA 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCATTGAAGCCATCCAGGAAGTGGAAATGTTGCCAAGGCCACCTAAAGTGACTAAAGAA 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACATTTTCAGTTACATCAACAATGCACTATTCTCAACAGATCACGGTCAGTCTAGCA 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGGATATGAGAGAACTICTICCCCTAAGCCTCGATTCAAGAGCTATGCCTACACACAG 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCCATTTCCTTCACAGCATTTGGAA 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   derrectrarereacerereacereracadeaacecartrectreacade---- 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACAAGGAGAGTTTCTAATGTGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAG 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
  Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 5691)

Clark, A.G., Clanoweki, S., Nielson, R., Thomas, P., Kejariwal, A.,

Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,

Rerriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J.,

Adans, M.D. and Cargill, M.

Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                     Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGTACATGATTGTATTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGATGTTGATACCACCTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAACCAAAAATTGATGTGTGTTAATGTGCTTACAGATGTTGATACCACGTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAACATTTTCAGTTACATCATCAAATGCACTATTCTCAACAACAGATCAGGTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGTACATGATGGATTTGACAGCCCATCAGGCCGGGTTGGTAATATTCTACAATTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 5691;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41.4%; Score 994.4; DB 29; Length
95.0%; Pred. No. 1.5e-215;
iive 0; Mismatches 46; Indels
                                                                                                                                                 gene trios
Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .5691
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="taxon:9606"
<1. .>5691
/locus_tag="HCM0229"
                                                                                                                                                                                                                                                                                                                                                                                            them based on alignment.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 95.0
Matches 1041; Conservative
                                                                                                                                                                                           14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                260
                                                                                                                                                                                           PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NIBING
```

음

à g à

8 8 à d

g ö g ò g

à

g ò 음 ò a

```
rerrecraceacrivarecasacaacaacrecraciraareracareacareacrerrea
                                                                                                                                       AGTITITIGCCACAACAAGTGAGCATTGAAGCCATTCAAGAAGTGGAAATGTTGCCCAGGAC
                                                                                                                                                                                              ACCT -- - AAAGTGACTAAAGAAGAACATTTTCAGTTACATCAAATGCACTATTCTCA
                                                                                                                                                                                                                                        818 ATCITCAAAAGIAACIAGAAAAAAAACAITTICAAITACAICACCAGAIGCATIACTICA
                                                                                                                                                                                                                                                                                                             ACAGATCACGTCAGTCTAGCACAGGGATATGAGAGAACTTCT---TCCCCTAAGCCTCG
                                                                                                                                                                                                                                                                                                                                                              878 ACAGATCACAGTCAGTCTAGCACAGGGCTATGAACAAACTTCTTCATCTCCTAAGCCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                    295 ATTCAAGAGCTATGCCTACACAGAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             938 ATTCAAGAGTTATGCCTTCACACGGCTGCTTATGTTGCCACCTCTGATTCCACACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    355 CCCATTTCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1058 GGAGACGGAAGTAAATCTGGATAGTTACCAAACTGCTTTAGAAGAAGAAGTACTTTCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                475 TCTTTCTGCTGAGGACACATTGCAAGCACACAAGGAGAGAGTTTCTAATGATGTGGAAGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1118 rérriciscesassaracariscesascacassassas rérricasargarerresassas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                535 GAAAGACCAGTITCAIACTCAIGAGGGGIACAIGAIGGATTIGACAGCCCAICAGGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1178 GAAAGAACAGTTTCATGCTCATGAGGGATTCATGATGGATCTGACATCTCATCAAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               595 GGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1238 TGTTGGTAATGTTCTACAGTTAGGAAGTCAACTAGTTGGAAAAGGGAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTAGCTAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1358 GGTAGCTAGCATGGAAAAAAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        775 GAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAGAACAAGGAAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  835 GGAAGAGCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAAAAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1478 GGAAGAGCCCTTTGGACCTGATCTTGAAGATCTAAAATGCCAAGTACAACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        955 GGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1598 agreerreardaarccaecegrearcarecaecaecrecrirgeaaeaacaacriaager
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1015 ATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1075 AGACACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1718 AGATATTCTTCTAAAATGGCAGCATTTTTACTGAAGAACAGTGCCTTTTTAGTACATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACAGAAGCTGAAACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGA 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            715 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1135
                                                                                                                                          758
                                                                                                                                                                                                                                                                                                             238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         415
                                                                                    121
                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                    셤
                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                 8
                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                               Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Fukuda, S., Furuno, M., Hanamato, K., Hiroka, T., Hirozane, T., Hori, F., Ishi, Y., Itoh, M., Kagawa, I., Kaukawa, T., Katoh, H., Kawai, J., Konima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, K., Maraya, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Nimazaki, R., Ohno, M., Okazawi, Y., Saito, R., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, Y., Tanaka, T., Tomaru, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Muramatsu, M. and Hayashizaki, Y.

Direct Submission and Hayashizaki, Y.

Direct Submission Research Group, RIKEN Genome Conter (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (B-mail:genome-reseges:riken.go.jp, TRL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222, Fax:81-45-503-9226, Cond. Broise Center and Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Exploration Research Group in Riken Genomic Science Center and Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Exploration Research Group in Riken Genomic Science Center and Genome Exploration Research Group in Riken Genomic Science Haboratory in Riken Genomic Science Laboratory in Riken Genomic Science Laboratory in Riken Genomic Science Haboratory in Riken Genomic Science Haboratory in Riken Genomic Science Haboratory in Riken Genomic Science Haboratory in Riken Genomic Science Haboratory in Riken Genomic Science Haboratory in Riken Genome Haboratory in Riken Genomic Science Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Riken Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Riken Genome Haboratory in Ri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          prepare mouse tissues.

Retina RNA was provided by Dr. Stefano Gustincich (Department of Neurobiology, Harvard Medical School, 220 Longwood Ave., Boston, MA 02115, USA) whose assistence is gratefully acknowledged. Please visit our web site for further details.

URL:http://genome.gsc.riken.go.jp/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="retina"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev stage="adult"
1. .3056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                  The FANTOM Consortium and the RIKEN Genome Exploration Research Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs

Nature 420, 563-573 (2002)

6 (bases 1 to 3056)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATGCCTTCAACATTGCAAAATGCCAGTTAGGCATAGAAAAACTTCTTGATCCTGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ACATGCATTCAACATCGCCAGATATCAATTAGGCATAGAAAACTACTCGATCCTGAAGA
                                                                                                                                          RIKEN Genome Exploration Research Group Phase II Team and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="dystrophin, muscular dystrophy (MGD|MGI:94909,
GB|NM_007868, evidence: BLASTN, 100%, match=999)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6; Gaps
                                                                                                                                                                                     Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 11; Length 3056;
cing pipeline with 384 multicapillary sequencer Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36.0%; Score 864.6; DB 11;
Similarity 84.0%; Pred. No. 5.1e-186;
01; Conservative 0; Mismatches 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="FANTOM_DB:A930019F21"
/db_xref="MG1:2409854"
/db_xref="taxon:10090"
/clorne="A930019F21"`
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Mus musculus"
/mol_type="mRNA"
/strain="C57BL/6J"
                                                                                                                                                                            FANTOM Consortium.
            sequencing
                                                                                          11076861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Simi
Matches 1001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                 TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                          PUBMED
                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
```

1117

474

414

354 997

294

1177

1237

1477

1537

1134

ò d

1417

714

T 8771 dc	TTCAGAAAAAGAAGAAGAATGAAGAACATTCAGACAAGTGGCTTTAAAGA 1828	Db 3	370GCTCCCAGAGACAAGTCACTTGACAGTTCATTGATGGAGGGAAGTAAATCTG 423
RESULT 4		Oy 4	434 GACCGITAICAAACAGCIITAGAAGAAGIAITAICGIGGCIICCIICIGCIGGGACACA 493 404 GARAACHA CABAACHA BALALII
. <u>X</u>	AY399455 Mus musculus HCM0229 gene, VIRTUAL TRANSCRIPT, partial sequence,		TIGCAGCAGAGAGAGATITCIA I I I I I I I I I I I I I I I I I I
	genomic survey sequence. Ar399455 Ar399455.1 GT:39755444	da 4	
KEYWORDS GSS. SOURCE Mus 1 ORGANISM MUS 1	musculus (house mouse)	2y 2b	554 CAIGAGGGGTACATGATTGGATTTGACAGCCCATCAGGGCCGGGGTTGGTAATATTCTACAA 613
	Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.		
REFERENCE 1 AUTHORS Cla	(bases I to 5697) rrk,A.G., Glanowski,S., Nielson,R., Thomas,P., Kejariwal,A., id. M. A. Tanenbaum, D.M. Civello,D.R., Lu.F., Murchy,B.,	9 90	99
Fer Ada TTT:	Perriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J., Adams,M.D. and Cargill,M. Thferring nonneutral evolution from human-chimo-mouse orthologous	o odd	674 GAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGCTAGC
ĀĽ)		
	to 5697)	Db 40	724 CAAAGCAAATTACACAAAGTTCTAATGGATCTCCAGAATCAGAATTAAAGAACTAGAT 783
X X	Clark,A.G., Glanowski,S., Nigelson,K., Thomas,F., Kejariwal,A., Todd,M.A., Tanenbaum,D.M., Civello,D.R., Lu,F., Murphy,B., Ferriera,S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J., Adams,M.D. and Cargill,M.	Oy 7	794 GACTGGCTAACAAAAAGAAAGAAAGAACAAGAAAATGGAGGAAGAGCCTCTTGGACCT 853
TITLE Dir JOURNAL Sub	rect Submission (16-NOV-2003) Celera Genomics, 45 West Gude Drive,	, VO	854 GATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCAAGAAGATCTAGAA 913
COMMENT Thi	Rockville, MD 20850, USA This sequence was made by sequencing genomic exons and ordering them based on alimment	8 da	844 GAICTIGAAGAICCIAAAAIGCCAAGIACAACAACAIAAGGIGCTICAAGAAGAICTIGAAA 903
FEATURES Source			CAAGAACAAGTCAGGGTCAATTCTCTCACTGACTGGTGGTGGTAGTTGATGAATCTAGT
	/organism="Mus musculus" /mol_type="genomic_DNA"		
gene	/db_xref="taxon:1099" <1>5597 /locus tag="HCM0229"	s s	974 GGAARTCACGCAACTGCTGCTTTGGAACACTTTAAGSTRTTGGAACACTGCATGGGGCA 1093 964 GGTGATCATGCAACGCTGCTTTGGAAGAACAACTTAAGGTACTGGGGAGATCGATGGGCA 1023
		07	034 AACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTACAAGACACTCATAGATAACTG 1093
Query Match Best Local Si Matches 927;	ch 32.8%; Score 786.6; DB 29; Length 5697; 1 Similarity 84.2%; Pred. No. 3.5e-168; 927; Conservative 0; Mismatches 159; Indels 15; Gaps 3;		
20 A C C C C C C C C C C C C C C C C C C	AGATATCAATTAGGCATAGAGAAACTACTCGATCCTGAAGATGTTGATACCACCTATCCA 79	75 76 70	1084 CAGCATTTACTGAACAG 1104
2y 80 G	GATAAGAAGTCCATCTTAATGTACATCACATCACTCTTCCAAGTTTTGCCTCAACAGG 139 	RESULT 5 AY399454 LOCUS	AV399454 SS 12-DEC-2003
2y 140 A	AGCATTGAAGCCATCCAGGAAAGTGGTTGCCAAGGCCACCTAAAGTGACTAAA 196	ACCESSION VERSION	genomic survey sequence. AY399454 AY399454.1 GI:39755443
2y 197 Q dc	GAAGAACATTTTCAGTTACATCATCAACACGATTTCTCAACAGATCACGGTCAGTCTA 256	KEYWORDS SOURCE ORGANISM	
257 G	GCACAGGGATATGAGAGAACTTCTTCCCCTAAGCCTCGATTCAAGAGCTATGCCTAC 313	REFERENCE AUTHORS	Mammalla; Butheria; Primates; Catarrinn; Hominidae; Pan. 1 (bases I to 567) Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,
2y 314 A	ACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATTTCCTTCACAGCAT 373	TITLE	<pre>Perriera.S., Wang.G., Zheng.X.H., White,T.J., Shinsky,J.J.J., Adams,M.D. and Cargill,M. Inferring nonneutral evolution from human-chimp-mouse orthologous and trips</pre>
374	7 PTG	JOURNAL PUBMED REFERENCE	Science 302 (5652), 1960-1963 (2003) 14671302 2 (bases 1 to 5676)

```
833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31
                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                RESULT 6
BI729851
                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                       g
                                                                                                                                          ò
                                                                                                                                                                   셤
                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                         g
                       8 6
                                                                               ò
                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                 112
                                                                                                                                                                                                                                                                                                                                                                                                             172
                                                                                                                                                                                                                                                                                                                                                                                                                                          150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCAGGCCACCTAAAGTGACTAAAGAACATTTTCAATTACATCATCAAATGCACTAT 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAAGGCCACCTAAAGTGACTAAAGAAGAACATTTTCAGTTACATCATCAAATGCACTAT 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTCAACAGATCACGGTCAGTCTAGCACAGGGATATGAGAGAACTTCTTCCCCCTAAGCCT 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGATTCAAGAGCTATGCCTACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGG 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            353 AGCCCATTTCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTG 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        413 ATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGG 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTG 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTC 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 442 NYMININYMYNININYMYNINYMYNININYMYNININYMYNININYMYNININYMYNINYMYN 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAATTATCAGAA 652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGTTGGTAATANNNNNANTTGGGAAGTNNNNTGATTGGAACAGGAAATTATCAGAA 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGAAGAAACTGAAGTACAAGAGCAGATGAATCTNNNNNATTCAAGATGGGANNNNNNN 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGTAGCTAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAAT 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNTTTACATAGAGTTTTAATGGATCTCCCAGAAT 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAAGAAGAAGAAATG 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               801
                                                                                                                                                                                                                                                                                                                                                                             90
Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriaca, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
Direct Submission
Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and ordering them based on alignment.
                                                                                                                                                                                                                                                                                                                                                                                                                             CTCTTCCAAGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31 criacadardrigeraccaccrarccadaradaadrecarriraardracarcacca
                                                                                                                                                                                                                                                                                                                                                                                                             CTCTTCCAAGTTTTGCCTCAACAAGTGAGCATTGAAGCCATCCAGGAAGTGGAAATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGATTTTGACAGCCCATCAGGGC
                                                                                                                                                                                                                                                                                                                                                CCTGAAGATGTTGATACCACCTATCCAGATAAGAAGTCCATCTTAATGTACATCACATCA
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                 25.3%; Score 607.8; DB 29; Length 5676; 60.8%; Pred. No. 2e-127; ive 0; Mismatches 408; Indels 9;
                                                                                                                                                         1. .5676
/organism="Pan troglodytes"
/mol_type="genomic DNA"
/db.rref="taxon:9598"
<1. .>5676
                                                                                                                                                                                                                         <1. .>5676
/locus_tag="HCM0229"
                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                  al Similarity
646; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   233
                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                23
                                                                                                                                                                                                                                                                                                                                                                                                           113
                                                                                                                                                                                                                                                                                                                                                                                                                                          91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 773
                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                TITLE
JOURNAL
        AUTHORS
                                                                                                                                            FEATURES
                                                                                                              COMMENT
                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
Bukaryota; Metazoa; Chordata; Craniata; Vertebzata; Euteleostomi;
Bukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Musnae; Musnae; Lo 834)

El (bases I to 834)

NH-MGG http://mgc.noi.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: Gapbs-r@mail.nih.gov

Tissue Procurement: The Cepko Laboratory

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

CLOR Library Preparation: Life Technologies, Inc.

Clone distribution: MGC Clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

Plate: LLAMI1908 row: e column: 03

High quality sequence stop: 796.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              603349511P1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5357162 5', maRNA sequence.
                                                                                                                                                                                                                             953 GTGGTAGTTGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAG 1012
                                                                                                                                                                                                                                                                                                                                                                                     1013 GTATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCGCTGGGTTCTTTTA 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                               982 GTATTGGGAGATCGATGGGCAAACATCTGTAGGTGGACAGAAGCCCGCTGGGTTCTTTTA 1041
                                                                                                                                                                                                                                                                                                       981
                                                                                                                                                   921
                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /mol_type="mRNA"

/db xref="texon:10090"
/clone="IMAGE:5357162"
/tissue type="retina"
/lab_host="DH108 (phage-resistant)"
/clone=lib="NIH MGC 94"
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note="Organ: eye; Vector: pcMV-SPORT6; Site_1: Not1;
/note: list is a NIH_MGC Library."
802 gaggaagagccrcrrcgaccrgarcrrcaagaccraaaacgccaagracaacaacaraa
                                                                                                                                               922 GIGGIAGIIGAIGAANNNANIGGAGACCACGCAACIGCIGCIIIGGAAGAACAACIIAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1028 TGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              resegnancarrananaesernarenesasesereserresentresandaneere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 834;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1073 CAAGACACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGG 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1042 chadacarccrrcrcaaaredcaacercrracreaadaacadd 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 25.2%; Score 605.4; DB 12; Best Local Similarity 88.6%; Pred. No. 4.4e-127; Matches 690; Conservative 0; Mismatches 86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BI729851.1 GI:15706864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI729851
```

g ò 셤 à g à

8

g

qq

à 엄

ò

ò ద ò ద à 임 ò a ð 원 ò g

```
1. :595
| forganism="Homo sapiens"
| mol_type="mkNA" |
| mol_type="mkNA" |
| mol_type="mkNA" |
| forganism="Hends |
| forganism="Hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism="hends |
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=|
| forganism=
Harvard University, Howard Hughes Medical Institute
Dept of Molecular and Cellular Biology, 7 Divinity Ave, Cambridge,
MA 02138
Tel: 617-495-1812
Fax: 617-495-8557
Email: dmelton@biohp.harvard.edu
Library was constructed by Dr. Hiroshi Inoue DNA sequencing by:
Washington University Genome Sequencing Center For information on
obtaining a clone please contact: Dr. Hiroshi Inoue
(hinoueshin.wastl.edu)
Seq primer: -40RP from Gibco
High quality sequence stop: 448.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415 TCATTTGGCAGTTCATTGATGGAGGGGAGGTAAACCTGGACCGTTATCAAACAGCTTA 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               235 Treacadecearcadesecessirseraararreracaarressaagraacrearresa 176
                                                             Cambridge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     475 ACCTCTGACCCTACACGGAGCCCATTTCCTTCACAGCATTTGGAAGCTCCTGAAGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      175 ACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCATCAAATGCACTATTCTCAACAGATCACGGTCAGTCTAGCACAGGGGATATGAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                595 carcarcaarigcacrarrercaacagarcaggreagreagreaggagarargagaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         275 ACTICITCCCCTAAGCCTCGAITCAAGAGCTATGCCTACACACAGGCTGCTTAIGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :35 ACTICITICCCTTAAGCCTCGATTCAAGAGCTATGCCTACACACAGGCTGCTTATGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             335 ACCICIGACCCIACACGGAGCCCATITCCTICACAGCATITGGAAGCTCCTGAAGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       395 TCATTTGGCAGTTCATTGATGGAGAGTGAAGTAAACCTGGACCGTTATCAAACAGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGAAGTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      355 GAAGAAGTATTATCGTGGCTTCTTTCTGCTGAGGACACATTGCAAGCACAAGGAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               515 TCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATACTCATGAGGGGTACATGATGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        575 TTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             635 ACAGGAAATTATCAGAAGATGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCTAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       695 TCAAGATGGGAATGCCTCAGGGTAGCTAGCATAGGAAAACAAAGCAATTTACATAGAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAAA 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match

24.7%; Score 593.4; DB 14;
Best Local Similarity 99.8%; Pred. No. 2.2e-124;
Matches 594; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Bukaryota, Metazoa, Chordata, Catarrhini, Hominidae, Homo.

I (bases 1 to 595)
Melton, D. Brown, J., Kenty, G., Permutt, A., Lee, C., Kaestner, K.,
Iemishka, I., Scearce, M., Brestelli, J., Gradwohl, G., Clifton, S.,
Hillier, L., Marra, M., Pape, D., Wylei, T., Martin, J., Blistain, A.,
Schmitt, A., Theising, B., Ritter, E., Ronko, I., Bennett, J.,
Williams, T., Jackson, Y. and Bowers, Y.
Endocrine Panoreas Consortium
Unpublished (2000)
Other ESTE 1821COL, YI
Contact: Douglas Melton, Klaus H. Kaestner, & Hiroshi Inoue
Endocrine Pancreas Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHI//BI6 SW:DMD_HUMAN P11532 DYSTROPHIN. [1] ;, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1687 AGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGA 1746
                                                                                                                                                                                                           ACAACTGCCAATGTCCTACAGGATGCTACCCGTAAGGAAAGGCTCCTAGAAGACTCCCAAG 1207
                                                                                                                                                                                                                                                                                                                                                                                     1208 GGAGTAAAAGAGCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACA 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGATGCAGTCCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTT 1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGT 1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCACCTTTCTCTGCAGGAACTTCTGGTGTGGCTACAGCTGAAAGATGAATTAAGC 1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGGAACGATGTACATAGG 1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTTCAAGAGGAATTGAAAACTAAAGCTGTAATCATGAGTACTCTTGAGACTGTA 1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1628 CGAATATTICTGACAGGGGGCCTTTGGAAGGACTAGAGAACTC-TACCAGGAGCCCAG 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGITTATCACAACCIGGAIGAAAACAGCCAAAAAICCIGAGAICCCTGGAAGGITCC 1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       210 GGAGTCAGAGAGCTGATGAAACCATGGCAAGATCTCCAAGGAGAAATTGAAACTCACACA 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              270 GATATCTATCACAATCTTGATGAAAATGGCCAAAAAATCCTGAGATCCCTGGAAGGTTCG 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450 Triccarcifrication de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata de la contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del contrata del
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91 riacideageagricerrereacereaagaan 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cercadecaccarcedreaririccaecacricaeaaccaeareararacarade 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         630 AGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAACTCTTACCAGGAGCCCAG 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1747 GGAGGTCAATACTGAGTGGGAAAATTGAACCTGCACTC-CGCTGACTGGCAGAGAAAA 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      808
                                 TTACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAA
                                                                                                                                                                                                                                                                                 151 ACAACTGCCAATGTCCTACAGGACGCTTCCCGTAAGGAGAAGCTCCTAGAAGACTCC-AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGAAAAAGTCTCTCAACATTAAGATCCCATTTGGAAGCAAGTTCTGACCAGTGGAAGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CB177816.1 GI:28186206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST.
Homo sapiens
Homo sapiens
                                                                                                                                                                                                               1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1568
                                     1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 7
CB177816/c
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
```

ö

536

476

416 454 514

236 634

d

```
ALIZISSO 579 bp mRNA linear EST 04-SEP-2003
DKFZp762L078 rl 762 (synonym: hmel2) Homo sapiens cDNA clone
ALIOSEPA
                                                                                                                                                         1413 CCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTC 1472
                                                                                                                                                                                                                                                               545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1592 AAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCCT 1651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCC 1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ingolstaedter Landstr.1, D-85764 Neuherberg, Germany
This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DKPZ); Famil s.wiemann@dkfz-heidelberg.de;
sequenced by MediGenomix (Martinstred/Germany) within the cDNA
sequencing consortium of the German Genome Project. No s1 sequence
                                                                                                        366 GITIGGATAACAIGAATITCAAGIGGAGIGAACTICAGAAAAAGICTCTCAACAITAGGI 425
306 ATGGCCAAAAATCCTGAGATCCCTGGAAGGTTCGGATGAAGCACCCCTGTTACAAAGAC 365
                                                                                                                                                                                                                                                                                                                                                                                                                          546 receaseastresasaseaseaseargarararararasecerresaseasearresaser 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryora; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 579)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This clone (DKFZp762L078) is available at the RZPD in Berlin. Please contact the RZPD: Ressourcenzentrum, Heubnerweg 6, 14059 Berlin- Charlottenburg, GERMANY; Email: clone@rzpd.de. Location/Qualifiers
                                                        1353 GTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGT
                                                                                                                                                                                                            426 cccarrriggaagcaagrrcrgaccagrggaagcgrrrgcarcrrrcrcrcaggaacrrc
                                                                                                                                                                                                                                                                                                                  Tretrigectacaecteaaaaateareaacreaecearcaecaccarcearearr
                                                                                                                                                                                                                                                                                                                                                                       TTCCAGCAGTTCAGAAGCA-GAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                606 AAAGAACCTGTAATCATGAGTACTCTGGAGACTGTGAGAATATTTCTGACAGAGCAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ottenwaelder, B., Obermaier, B., Mewes, H.W., Gassenhuber, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol type=umRNA"
/mol type=umRNA"
/db xref="taxon:9606"
/clone="byref97621078"
/tissue_type="malanoma (MeWo cell line)"
/dev stage="adult"
/lab_host="bhlob"
/clone lib="762 (synonym: hmel2)"
/note="Vector: pSport1; Site_1: Not1; Site_2: Sall"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1712 CAGAATGTCACTCGGCTTCTACGA 1735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGAATGTCACTCGGCTCCTACGA 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST (Ottenwaelder, et al.)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AL121550.1 GI:5927551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: MIPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           available.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wiemann, S.
                                                                                                                                                                                                                                                                                                                                                                             1533
                                                                                                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
AL121550
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                     ઠે
                                                                                                셤
                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                               Exaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. B. (bases 1 to 750)

S NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

LOTOPOLIS OF Health, Mammalian Gene Collection (MGC)

LOTOPOLIS STAUSDERS OF HEALTH, Mammalian Gene Collection (MGC)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov

Tissue Procurement: The Cepko Laboratory

CONA Library Preparation: Life Technologies, Inc.

CDNA Library Preparation: Life Technologies, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LNL at:

http://mage.llnl.gov

Plate: LLMM1908 row: f column: 04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1000 AGAACAACTTAAGGTATTGGGAGATCGATGGCAAACATCTGTAGATGGACAGAAGACG 1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGGTTCTTTTACAAGACACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAA 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GITTCTTGCCTGG-CITACAGAAGCTGAAAC--AACTGCCAATGTCCTACAGGATGCTAC 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1177 CCG-TAAGGAAAGGCTCCTAGAAGACTCCAAGGG--AGTAAAAGAGCTGATGAAACAATG 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1234 GCAAGACCTCCAAGGTGAAA-TTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAA 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGAC 1352
                                                                                                                                                                 BI730168 750 bp mRNA linear EST 20-SEP-2001
603349711F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5357187 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73 cricegac ----- Agaa crcaragaria creca ederece creca ederece en 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGCTAAGGAGAAGCTCCTAGCAAGACTCCAGGGCAGTCAGAGAGCTGATGAAACCATG 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="retina"
/lab_host="DH10B (phage-resistant)"
/clone_lib="NIH_MGC_94"
/clone_lib="NIH_MGC_94"
/note="Gorgan: eye; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dI primed.
Average insert size 3.3 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC_Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13 agaararcaractrorrogogaaacarroacraaacaroargagragragroaggaggcorg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          126 GITTCTTTCCTGGATTTACGGAAGCAGAACAGAGCTGCCTACAATGTCCTACAGGACGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20.6%; Score 495.2; DB 12; Length 750;
85.5%; Pred. No. 5.7e-102;
rative 0; Mismatches 93; Indels 15; Gaps
     TTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGAATGACTGGCTAACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. 750

| organism="Mus musculus"

| organism="Mus musculus"

| dol type="mRNA"

| db xref="taxon:10090"

| clone="IMAGE:5357187"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence stop: 747.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                    Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                       BI730168.1 GI:15707181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 636; Conservative
                                                                                                                                                                                                                       mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1060
                                                                                                                                                                 LOCUS
DEFINITION
                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                 RESULT 8
BI730168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
```

à d ਨੇ g ò 셤 ò 엄 े 원 ò ö

654

714 9

us-09-845-416-9_copy_600_3000.rst

à g 유

à

ъд

ጽ

g

ਨੇ

g à 셤 à 음 ਨੇ g

à

```
CE850319 1047 bp mRNA linear EST 01-SEP-2003
MAX-0070 MOUSE ADULT RETINA Mus musculus cDNA 5', mRNA sequence.
CB850319 GI:34380806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGIAGITGAIGAATCIAGIGGAGAICACGCAACIGCTGTTGGAAGAACAACTIAAGGT 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I (bases 1 to 1047)
Yu,J., Farjo,R., MacNee,S.P., Baehr,W., Stambolian,D.E. and Swaroop,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 IGAAGAAACTGAAGTACAAGAAGCAGATCCTCTAAATTCAAGATGGGAATGCCTCAG 120
/mol_type="mRNA"
/db xref="taxon:9544"
/clone="IMAGE:6884820"
/clone="IMAGE:6884820"
/tlab host="DH10B (phage-resistant)"
/clone_lb="NICHD_RN_Ov1"
/note="Gorgan covary, Vector: pDNR-LIB, Site_1: Sfi I;
/note="Gorgan covary, Vector: pDNR-LIB, Site_1: Sfi I;
/note="Gorgan covary, Tessue for midirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
/ste_2: Sfi I; Cloned unidirectionally, Primer: Oligo dT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 GAAAGAACCCCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1015 ATTGGGAGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGGCTGGGTTCTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1075 AGACACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGAAAAGTTTCTTGCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481 AGACATCCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAGAGCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Annotation and analysis of 10,000 expressed sequence tags from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTAGCTAGCATGGAAAAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGAAACTGAAGTACAAGAGCAGATGAATCTCCCTAAAATTCAAGATGGGAATGCCTCAG
                                                                                                                                                                                                                                                                                                                                                                                595 GGTTGGTAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                        1 GGTTGGTAATATTCTACAATTGGGAAGTCAGCTGATTGGAACAGGAAATTATCAGAAGA
                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                          DB 14; Length 728;
                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                       42;
                                                                                                                                                                                                                                                                                        Score 485.8; DB 14
Pred. No. 7.8e-100;
0; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                        Query Match 20.2%;
Best Local Similarity 92.4%;
Matches 511; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACAGAAGCTGAA 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCAGAAAAAGAA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
CBBS0319
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                    DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CB228986 728 bp mRNA linear EST 10-FEB-2003 AGENCOURT 11499247 NICHD Rh_Ovi Macaca mulatta cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       рe
                                                                                                                                                                                                                                                                       1415
                                                                                                                                                                                                                                                                                                                                                                 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1655
                                                                                                                                                                                      1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1536 CAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAG 1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1656 AAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGA 1715
                                                    ö
                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                       71 AGGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAACA 130
                                                                                                                                                                                                                               190
                                                                                                                                                                                                                                                                                                                                                                                                          251 ATTIGGAAGCCAGTICTCACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGG 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    431 AACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGG 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491 AAGGGCTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Ph.D.

Email: cgapbs-r@mail.nih.gov

Issue Procurement Dr. Ellot Spindel

CDNA Library Preparation: CLONTECH

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DAN Sequencing by: Agencourt Bioscience Corporation

Clone distribution: NGI-CGAP clone distribution information can k

found through the I.M.A.G.E. Consortium/LLNL at:

http://mage.llni.gov

Plate: LLCM3135 row: e column: 11

High quality sequence stop: 583.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Macaca mulatta
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cercopithecinae; Macaca.
1 (bases 1 to 728)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
NCI-CGAP ttp://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                    GCCAAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGTCCTGTTACAAAGACGTT
                                                                                                                                                                                                              1356 TGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCC
                                                                                                                                                                                                                                                                                                        191 TGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCC
                                                                                                                                                                                                                                                                                                                                                                    1416 ATTIGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1596 AACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGG
                                                                                               1236 AAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTTATCACAACCTGGATGAAAACA
                                                    Gaps
                                                    ö
       Length 579;
                                                    Indels
       20.3%; Score 486.6; DB 9; ilarity 97.2%; Pred. No. 4.8e-100; Conservative 0; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1716 AIGICACTCGGCTTCTACGAAAGCAGGCT 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Macaca mulatta"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Macaca mulatta (rhesus monkey)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CB228986.1 GI:28280564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tumor Gene Index
Unpublished (1997)
           Query Match
Best Local Similarity
Matches 495; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CB228986
                                                                                                                                                                                      1296 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
CB228986
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
```

8

à

1074

480

420

300

180 834 240

774

360

954

```
Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Simi
Matches 518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                       RESULT 12
BM488464
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1030 GGCAAACATCTG-TAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACACTCATAGAT 1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     206 reargaggarreargargarerearerearereareargaererreirggraargarereea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           326 AGAACAAATGAATCTCCTAAATTCAAGATGGGAATGTCTCAGGGTANCCTAGCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>aacaaagcaaartacacaaagcricraarggarcriccagaarcagaarraaaagaacrag</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACAAGAACAAGTCAGGGTCAATTCTCTCACACTCACATGGTGGTGGTAGTTGATGAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             971 AGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAAC-TTAAGGTATTGGGAGATCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĠĠĂŢĀĠŢŢĀĊĊĀĀĀĊŢĠĊŢŢŢĀŊĀĀĠĀĠŢĀĊŢŢĊŖŢĠĠĊŢŢĊŢŢĊŢŢĠĊĊĠĀĠĠĀŢĀĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGCAAGCACAAGCAGAGTTTCTAATGATGTGGAAGTGGTGAAAGACCAGTTTCATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGAAACTGAAGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAG-CTAGCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            732 AACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACTGAAAGAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             arcacrecrana de la companida de la companida de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca del contraca de la contraca de la contraca del contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca del la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la contraca de la con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGC-TTCAAGAAGATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    crgarcrigaagarcraaargccaagracaacaacaraaggcgrrrcaagaagarcra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      626 AGCGGGGATCATGCAACAGCTGCTTTGGAANAACAACTTTAAGGNACTGGGAGATGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              686 GGCAAATATCTGCAAAATGGACTGAAAACCGTTGGATTGTTTTTTACANGATTTTTCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACTGCAACAGTTCCCCCTGGACCTGGAAAGTTTCTTGCCTGGCTTACAGAAGCTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATGGCAGCNTTTTACTGAAAANANGCCTTTTTTATNCANGGNTTTTAAAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGGTAATATTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTAGGAAGTCAACTAGTTGGAAAATTATCAGAAGATGAAGAAGAAGAAGAAGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1047;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                             Contact: Swaroop, A.
Department of Ophthalmology and Visual Sciences
Kellogg Eye Center, University of Michigan
540 KEC, 1000 Wall St., Ann Arbor, MI 48105, USA
Tel: 734 615 2246
Fax: 734 647 0228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 459.6; DB 14;
Pred. No. 8e-94;
0; Mismatches 138;
                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:10090"
/tissue_type="retina"
/oclone_lib="MOUSE_ADDIT_RETINA"
/note="Vector: pSPORT1"
     retina
                                                                                                                                                                                                                                                                                                                                                                   organism="Mus musculus"
adult (2003)
                                                                                                                                                                                                                                                                       Email: swaroop@umich.edu.
Location/Qualifiers
1. .1047
developing mouse eye and
Genome Biol. 4 (10), R65
22881944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 80.3
Matches 578; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      911 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          613
                             JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DP.
```

ò

ò

ઠ

ò

ð

à

ò

 δ

ઠે g à

```
/deverse="Breast, leg:Embryo(d19);post-hatch(ld,1,3,5,7,9,11 weeks);growth plate(id,7d,14d post-hatch)"
/lab_host="E. coli EMDH10B"
/clone lib="Normalized Chicken Breast Muscle, Leg Muscle, Colone-lib="Normalized Chicken Breast Muscle, Leg Muscle, note="Vector: pCMVSPORT6; Library made from equivalent pools of total RNA isolated from each tissue (embryonic muscle 33.3%; juvenile muscle 33.3%; and epiphyseal growth plate 33.3% of the final RNA pool). Single pass sequencing from 5'-end"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1219 GCTGATGAAACAATGGCAAGACCTCCAAGGTGAAATTGAAGCTCACACAGATGTTATCA 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTGTTACAAAGACGTTTGGATAACATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTC 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTCAACATTAGGTCCCATTTGGAAGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTC 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST 07-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ccretificaeacatcricearalcardaactricaeardeacricaearacaasaarc 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rcraaacarradarcrcarriddaaddcaacadacaddagaaddarraaarcrcrc 239
BM488464
pgm2n.pk007.ll7 Normalized Chicken Breast Muscle, Leg Muscle, and Epiphyseal Growth Plate cDNA library (pgm2n.) Gallus gallus cDNA clone pgm2n.pk007.ll7 5' similar to sp|P11533|DMD CHICK Dystrophin pir|S02041 dystrophin, muscle - chicken emb|CAA31746.l| (X13369) dystrophin (AA 1 - 3660) [Gallus gallus], mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60 CAACCTGGATGAAAACGGGCAGAAAATCCTGAGATCCCTGGAAGGCTCAGAGGATGCTGT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTCATGAAGCAGTGGCAGGATCTACAGGCAGAATTGATGGTGCACATACTGACATCT-TNN 59
                                                                                                                                                                                                                                                                                          Gallus gallus (chicken)
Gallus gallus
Busaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
Phasianinae; Gallus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="Breast muscle, leg muscle and epiphyseal growth plate"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACCTGGATGAAAACAGCCAAAAATCCTGAGATCCCTGGAAGGTTCCGATGATGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ottawa Res. Centre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 663)
Cogburn, L. A. and Monsonego-Ornan, E.
ESTS from Normalized Chicken Breast Muscle, Leg Muscle,
Epiphyseal Growth Plate cDNA library, USDA/IFAFS Animal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.7%; Score 424.2; DB 12; Length 663; ilarity 78.1%; Pred. No. 8.3e-86; Conservative 0; Mismatches 144; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Larry A. Cogburn
Contact: Larry A. Cogburn
University of Delaware
Tel: 302-831-1335
Fax: 302-831-1335
Fax: cogburn@udel.edu, www.chickest.udel.edu.
Incarion/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /mol type="mRNA"
/strain="Commercial broiler and
Strains 90 & 21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Gallus gallus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        db_xref="taxon:9031"
/clone="pgm2n.pk007.117"
/sex="Male and Female"
                                                                                                                                                                                                                   BM488464.1 GI:18609395
```

≿ ત્ ⋩ ď ⋩ ď ጵ ક્ષ ጵ 8

```
/ COOL BLOOM PLANTS
/ DEPOTE THE TOTAL STATE THE THE SELENT CEOPOVRAN /
/ DEPOTE THE THE THE THE SELENT SELENT CEOPOVRAN /
IT PAPPAMEDADE CLESS THE SELENT SELENT CEOPOVRAN /
IT PAPPAMEDADE CLESS THE SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT SELENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The FANDER LINE ALL TEAM.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length CDNAs

Li (60,770 full-length CDNAs

Li (bases 1 to 3753)

E (bases 1 to 3753)

E (bases 1 to 3753)

E Adachi, J., Aizawa, K., Akimura, T., Hara, M., Hashizume, W., Fukuda, S., Furuno, M., Haragaki, T., Hara, M., Harokane, T., Hayashida, K., Hayashida, K., Hayashida, K., Hayashida, K., Hayashida, K., Hayashida, K., Marata, M., Koya, S., Kurihara, C., Mareuyan, T., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Mareuyama, T., Miyazaki, R., Murata, M., Namaraki, K., Nomura, M., Namaraki, R., Ohno, M., Ohsato, N., Okazaki, Y., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Saitoh, H., Sakai, C., Sakai, K., Sakazume, N., Sando, S., Shibata, K., Shibagawa, A., Takahashi, F., Takaku-Akahira, S., Takaka, T., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Muranatsu, M., Taqama, A., Takahashi, F., Takaku-Akahira, S., Takahasion

Burect Submission

U Submitted (16 APR-2002) Yoshihide Hayashizaki, The Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="unnamed protein product; dystrophin related protein 2 (MGD|MGI:107432, GB|U43520, evidence: BLASIN, 99%,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue type="head"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
dev_sige="16 days embryo"
                                                                                                                                                                                   Consortium and the RIKEN Genome Exploration Research
The RIKEN Genome Exploration Research Group Phase II Team and
                                                                      Functional annotation of a full-length mouse cDNA collection Nature 409, 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mus musculus"
/organism="Mus musculus"
/ol_type="max"
/strain="C57B1/6J"
/db_xxef="MG17813800"
/db_xxef="MG17813800"
/db_xxef="taxon:10090"
/clone="C130016K19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                       FANTOM Consortium.
                                                                                                                                                                               The FANTOM
                                                                          TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
           AUTHORS
                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carninci, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to repare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shibata, K., Itch, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itch, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Siksi nitegrated sequence analysis (RISA) system -384-format sequencing pipeline with 384 multicapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AKOB1426
Mus musculus 16 days embryo head cDNA, RIKEN full-length enriched library, clone:Cl30016K19 product:dystrophin related protein 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1759 TGAGTGGGAAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGACCCT 1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1819 TGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGC 1878
                                                                                                                                                                                                                                                                     1579 GGAATTGAAAACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCT 1638
                                                                                                                                                                                                                                                                                                                                                                                                                  1639 GACAGAGCAGCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCCAGAGAGCTGCCTCC 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300 carredresadararreceaerererekadadekadarearekretrearadadaerrenekadad 359
                                                                                                                                                                                                                                                                                                                                        360 geagcreaaaacaaaacaaccretrarcareaarecacreasacrereceacretrect 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420 gecagarcaaccagragagggacregaaaaggrerarceagaaccaaagagcerarcac 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480 TGAGGAGAGGCCCCAGAATGTCACTAAAGTTCTCCGAAGGCAAGCAGATGATGTCAGNAC 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540 reacheddaraachaarchachrichecheariddeaaaagaagahdardarchi 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
   240 TCTTCAGGAACTTTTGGCATGGCTGCAATTGAAGGAGGAGGATGAATTAAAACAGCAGCC
                                                                                                                         1519 TATTGGAGGCGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1699 TGAGGAGAGGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carninci, P. and Hayashizaki, Y. High-efficiency full-length cDNA cloning Meth. Enzymol. 303, 19-44 (1999) 99279253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTC; CAP trapper.
Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AK081426.1 GI:26349154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               full insert sequence.
AK081426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1879 TGA 1881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              660 TGA 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20530913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10349636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1042159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
AK081426
```

REFERENCE

AUTHORS

TITLE

JOURNAL

TITLE

Oy 2263 TTGCTGGGACCATCCCAA	RESULT 14 BU313510 BU313510 DEFINITION 60340220F1 CSEQCHNG SEQUENCE ACCESSION BU313510.1 GI:25821 KEYNORDS Gallus gallus (chick ORGANISM Gallus gallus (chick ORGANISM Gallus gallus (chick DATHORS Gallus gallus FEFERENCE 1 (bases 1 to 644) AUTHORS FONG, W.T. Tickle, C. TITLE A Comprehensive Collus FUNDMED 2233534 PUBMED 2233534 PUBMED 1244539 COMMENT CONTACT: Simon Hubbe OF Box 88, Mancheste Form of Enionol University of Mancheste Fearures FEATURES FEATURES FEATURES FEATURES FEATURES FEATURES FEATURES FORG, Wancheste Collone The Collone Tollone	is 482; Conservat
LQGELRRLKWQHEEAAEAPTLVEGSAEATPDHRNEELLAEARILRQHKSRLETRMQIL BDHNXQLESQLQRLBELLLQPPSESDGNGSAGSGLASSPRQSEGSHPREKGGTTPDTE VADDVGSKSQDVSLCLEDIMEKLHAFPSVRSSDVTANTLLAS" VADDVGSKSQDVSLCLEDIMEKRHAFPSVRSSDVTANTLLAS" 731. 3736 polyA_site	ANTICOGRAPHICA CONTROLLE STATEMENT S	1254 GOAAAGAGCATTTTCTCCCAATAAGTCCCCTACTACATCAACCACCAGGCTCAGACCAC

```
ism="Gallus gallus"

'ype="mRNA"

"n="Compton Line 151"

"="Carbor of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the companies of the 
AAATGACGGGCTCTACCAGTCTTTAGCTGACCTGAATAATGT 2322
                                                                                                                                                                                        AGACTGCCATGAAACTCCGAAGACTGCAGAAGGCCCTTTGCTT 2382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      z-Bzguerro,J., Overton,I.M., Burt,D.W., Bosch,E.,
C., Brown,W.R.A., Wilson,S.A. and Hubbard,S.J.
llection of Chicken cDNAs
), 1965-1969 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCGTCTGCACCTTTCTCTGCAGGAACTTCTGGTGTGCCTAC 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             644 bp mRNA linear EST 28-NOV-2002
Wel Gallus gallus cDNA clone ChEST508c24 5', mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata, Craniata; Vertebrata, Euteleostomi;
Neognathae, Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oard
Slecular Sciences
Seter Institute of Science and Technology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      %; Score 389; DB 13; Length 644;
%; Pred. No. 8.7e-78;
0; Mismatches 156; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  er, M60 1QD, UK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rd@umist.ac.uk.
Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cken)
```

ö

1482

1542

8

8 쉱 ò à

 δ

à

à

ò 엄

```
954 CGTCCGATGGAAACAACTACAGGCGTCAGTTAGTGAGAGCTTAAGCAGCTCCAGGATGC 1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1963 TCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCA 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2143 CCACAGGGACTITGGTCCAGCATCTCAGCACTITCTTTCCACGTCTGTCCAGGGTCCTG 2202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2203 GGAGAGGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCAGGAGACTCAAACAAC 2262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1543 TCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGT 1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1723 TCGCCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCA 1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           654 creneracionecacence de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de
This sequence was made by sequencing genomic exons and ordering them based on alignment.

Location/Qualiflers

1..2874
/organism="Homo sapiens"
/mol_type="genomic DNA"
/db_xref="kaxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1014 ccaccessacrirsescorescroacicaciacirirororocrocroacirocaserrocors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1363 CATGAACTTCAAGTGGAGTGAACTTCGGAAAAAGTCTCTCAACATTAGGTCCCATTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     234 chidaarcrororogangaaraaaaaaaaaadcroroaaacrococococorada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1423 AGCCAGTTCTGACCAGTGGAAGCGTCTGCACCTTTCTCTGTGCAGAACTTCTGGTGTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      294 gecerrercaeaceacaeagasaagerreaecreererreaegasarrareaereger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1483 ACAGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caeccaaaaadaridaddarirencadcrcadcrecccracadddadarardddccredir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1603 AATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGAGGAGCTTTGGAAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 474 carcrarrererecresasreascreascerrecrererecesses arrespendent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    594 CCGCTTTGTATGGAAGCAGGCGACGTGGCCAGTGAACTTGTGAGAAGTTGACAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1783 CTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAAGACTCCAGGAACTTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             714 edcaárogaggaachachachachchoagccaagchaachaaganahagaachachachaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1903 GCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               774 gecearregegarererreárregarreacreceasageacearerranas de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 834 CAAAGAAGAATTCTCCCCCATGAAAGATGGAGTAAAGTTGGTGAATGATCTGGCCCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2023 GCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTTGGAAGACCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        894 ACTIGCCATITICIGATGIGCACTIGICAATGGAGAATICCCAGGCCCTGGAACAGATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15.3%; Score 367.4; DB 29; Length 57.5%; Pred. No. 1e-72; ive 0; Mismatches 438; Indels
                                                                                                                                                                                                                                                                                                                                         <1. .. > 2874
/gene="DRP2"
/locus_tag="HCM3260"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 57.5 Matches 593, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        354 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                   FEATURES
                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACT 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS 15-DEC-2003
                                                                                                                                                                  1485 AGCTGAAAGATGATGAATTAAGCCGGCAGGCACCTATTGGAGGCGACTTTCCAGCAGTTC 1544
                                                                                                                                                                                                                                                                                                                                                              AGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAA 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAG 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGGCCCAGAATGTCACTC 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTC 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    426
                                                                                                                                                                                                                                                                                                                                                                                                                                                       127 AGAAGCAGAATGATGTTCATAGGACTTTCAAGAGGGGGGCTGAAAACAAAGAACCTGTTA 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rcardaardcacrirdadacrigrecdacricrirecriscadardaaccagradagadacris 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 307 AAGTICTCCGAAGGCAAGCAGATGATGTCAGAACTGAGTGGGATAAGCTAAATCTACGTT 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryogie...

Bukaryogie...

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 2874)

Clark, A.G. (alanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,

Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B.,

Perriera, S., Wang, G., Zheng, X.H., White, T.J., Shinsky, J.J.,

Adams, M.D. and Cargill, M.

Inferring nonneutral evolution from human-chimp-mouse orthologous
                                                                    99
               CGAGCACAGACCAGTGGAAGCGTTTACATCTCTCTTCAGGAACTTTTGGCATGGCTGC
                                                                                                                                                                                                                           ATTIGAAGGAGGATGAATTAAAACAGCACAAGCACCCATTGGTGGAGATATTCCCACTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    crecrearrescazasasasasarasares en contrasas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas estas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              547 GAGCAGAAATGGTGCCCCTTANAGAGAAGGTGCATCAAGTCAATGAGCTGGCTCACCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  487 cagigogoganciocioanagaciciciocagoancacinadaaaagicaagginaic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todark, A.G., Glanowski, S., Nielson, R., Thomas, P., Murphy, B., Todams, M.D., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Adams, M.D. and Cargill, M. White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. Birct Submission

Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive, Rockville, MD 20850, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AY408546 2874 bp DNA linear GSS 15-DI
Homo sapiens DRP2 gene, VIRTUAL TRANSCRIPT, partial sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIACCACTITIGGGCATTCAGCTCTCACCGTATAACCTC 2062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recercecerdaratreagriciecedracaerere 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene trios
Science 302 (5652), 1960-1963 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AY408546
AY408546.1 GI:39764517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genomic survey sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (human)
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14671302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AY408546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1725
                                                                                                                                                                                                                                                                                                                                                              1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           607
                                                                                                                                                                                                                                                                67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
AY408546
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
PUBMED
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                              쉼
                                                                                                                                                                  δ
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                             원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
```

1842

653

1902

1962

1722

473

2082

953

Search completed: April 5, 2004, 08:15:07 Job time: 4201.22 secs

```
RESULT 1
US-09-687-875A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-687-875A-1
셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 60, Appl
Sequence 10, Appl
Sequence 10, Appl
Sequence 9, Appli
Sequence 14, Appl
Sequence 16, Appl
Sequence 16, Appl
Sequence 17, Appl
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 17, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 5, Appli
                                                                          April 4, 2004, 16:58:13 ; Search time 63.0939 Seconds (without alignments) 11443.127 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                            cgactttccagcagttcaga......ccggagctgcttccaatttg 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence Sequence 3
                                                                                                                                                                                                                                                                                                                      Issued Patents NA:*
1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
           GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-484-970B-60
US-08-08-836-022A-10
US-08-09-091-501B-9
US-09-091-501B-9
US-09-091-501B-9
US-09-09-522-463-14
US-09-68-313A-10
US-09-68-313A-10
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
US-09-68-313A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-671-950-9
US-09-671-950-11
US-09-671-950-13
                                                                                                                                                                                                                         hits satisfying chosen parameters:
                                                                                                               US-09-845-416-10_COPY_1800_3100
1301
1 cgactttccaqcaqttcaga
                                                                                                                                                                                                 682709 seqs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                       - nucleic search, using sw model
                                                                                                                                                                   IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                              seq length: 0
seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1290
1135.2
1135.2
553.8
553.8
553.8
                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                    Scoring table:
                                                        OM nucleic
                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                Sequence:
                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  o
H
                                                                               Run
```

```
Sequence 1, Application US/09687875A
Sequence 1, Application US/09687875A
Sequence 1, Application US/09687875A
GENERAL INFORMATION:
APPLICANT: Xiao, Xiao
APPLICANT: Xiao, Xiao
APPLICANT: Liu, Paul
TITLE OF INVENTION: METHOD AND VECTOR FOR PRODUCING AND TRANSFERRING TRANS-SPLICED I TITLE OF INVENTION NUMBER: US/09/687,875A
CURRENT APPLICATION NUMBER: US/09/687,875A
CURRENT FILING DATE: 1999-10-15
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin version 3.1
SEQ ID NO 1
LENGTH: 5952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
Sequence 1, Appli
Sequence 5, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 71, Appli
Sequence 71, Appli
Sequence 10033, A
Sequence 10161, Ap
Sequence 10161, Ap
Sequence 15639, A
Sequence 15639, A
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3402 CGACTITICCAGCAGITCAGAAGCAGAACGAIGIACAIAGAGCCTITCAAGAGGGAAIIGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4; Length 5952;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
US-08-874-138-1

US-08-874-138-1

US-08-874-138-5

US-09-747-116-1

US-09-747-116-1

US-09-747-116-1

US-09-552-991A-10033

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-252-991A-10161

US-09-153-804-2

US-09-618-10161

US-09-618-10161

US-09-10161

US-09-10161

US-09-10161

US-09-10161

US-09-10161

US-09-10161

US-09-10161

US-09-10161

US-09-10161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                     ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
LOCATION: (2897)..(2898)
OTHER INFORMATION: S4 junction site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc feature
LOCATION: (3198)..(3199)
OTHER INFORMATION: S2 junction site
```

ÞΕ

8 6 6 6 8 B 8 8 8 8 5 g ò ď ò g 3 8 3 8 1020 4421 4481 4601 4241 CAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCATGACTCTCTCCAAGATCACCTCGA 420 3941 4181 4301 4361 4061 CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCCCCAAGCTGAGGTGAT 3761 TCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGACGAGGTCAG 4001 099 900 720 840 CAACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAGAGAAGAGAACGTGAGCCACGTCAA 3882 TGACCTTCCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA CCIGICITITIADAACIGGCATCATTITCCTGTGTAAAGCACATTIGGAAGAAAAAAAACAA CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATTGGGGG GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGGTGAGCCACGTCAA TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG CGAGACTCAAACAACTTGCTGGGACCATCCCCAAAATGACAGAGCTCTACCAGTCTTTAGC CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGC GAAGGCCCTTTGCTTTGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTTGGACCAGCA TATTTATGACCGCCTGGAGCAGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGA TATGTGTCTGAACTGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAACAGGGAGGATCCGTGT CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 3642 AAAATIGAACCIGCACTCCGCIGACTGGCAGAGAAAAAAAGACGAGAGACCCTIGAAAGACT TGTCCAGGGTCCCTGGGAGAGACCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGGCCT CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTG 1301 4302 (4362 4422 4482 4542 1081 1261 3762 541 3942 4122 1021 1141 1201 3702 3822 4002 4062 4182 4242 901 301 361 421 481 601 199 721 781 841 196 Dp g ò 셤 g ò 셤 8 g S ò 셤 셤 ð ò 엄 엄 ò ò 유 ò ò 엄 ò ద ò g $\dot{\delta}$ g ò g · & g δ

9015 8836 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCCAGAGAGCTGCCTCCTGAGGAGAG 8895 reaccineciceccaecinaceacinidescanicaecicicaecennaaccicaecae 9255 420 TGTCCAGGGTCCCTGGGAGGAGGCCATCTCGCCAAACAAGAGTGCCCTACTATATCAACCA 241 AAAATTGAACCTGCACTCACTGGCAGAAAAAAAAAAGACCCTTGAAAGACT 8716 CCACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAGAGGGAATTGAA 61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 8896 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGAGGTCAATACTGAGTGGGA 361 CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG reregaagacergaacaceagaregaagerrerecageregeceregagacegaereag 1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGTACATAGGGGCCTTCAAGAGGGAATTGAA Gaps 0; Indels Sequence 60, Application US/09484970B
Patent No. 6426186
JERERRAL INFORMATION:
APPLICANT: Volkmuth, Wayne
APPLICANT: Wolkmuth, Wayne
APPLICANT: Wolkmuth, Wayne
JITLE CO INVENTION:
FILE REFERENCE: PB-0014 US
CURRENT APPLICATION NUMBER: US/09/484,970B
CURRENT FILING DATE: 2000-01-18
NUMBER OF SEQ ID NOS: 172
SOFTWARE: PERL Program
SEQ ID NO 60
LENGTH: 13977
TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
NAME/KEY: unsure
LOCATION: 11721-11761, 12294, 13969
JOCATION: 17721-11761, 12294, 13969
CUR-00-168 NIPORMATION: A, C, G, or other
US-09-484-970B-60 DB 4; Query Match
99.2%; Score 1290; D
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches 9016 9196 9256 481 601 121 301 421 661 상원

600

RESULT 2 US-09-484-970B-60

Mon Apr

```
5678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCTGCATGAAGCCCACAGGGACTTTGGTCCTGCATCCCAGCACTTCCTTTCCACTTCA 5318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3317 GTTCAGGGTCCCTGGGAGAGAGCCATCTCACCAAACAAAGTGCCCTACTATATCAACCAC 5258
                                                                                                                                                                                                                                                                                                                                                                                                                                                             5918
                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GOTCAGAATGTCACTCGGCTACGAAAGCAGGCTGAAGAGAGGTCAACGCTGAATGGGAC 5738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               362 AAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5617 AAGGGATCCTGGCAGCCAGTGGGGGATCTCCTCATTGACTCTGCAGGATCACCTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5737 AAATTGAACCTGCGCTCAGCTGATTGGCAGAGAAAAATAGATGAAGCTCTTGAAAGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5557 AAAGTCAAGGCACTTCGGGGAGAATTGCACCTCTTAAAGAGAATGTCAATGGTGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGAAGACCTGAACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5437 TIGGAAGATCTGAATACCAGATGGAGGCTTCTACAGGTGGTGGAGGACCGTGTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5977 GATTTCCCAGCAGTTCAGAAGCAGAATGATATACATAGGGCCTTCAAGAGGGAATTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTAAAGAACCTGTAAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5917 ACTAAAGAACCTGTAATCATGAGTACTCTGGAGACTGTGAGAATATTTCTGACAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182 GCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242 AAATTGAACCTGCACTCCGCTGACTGGCAGAAAAAATAGATGAGACCCTTGAAAGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          422 AAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     482 GACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                        2 GACTITICCAGCAGTICAGAAGCAGAACGATGIACAIAGGGCCTICAAGAGGGAATITGAAA
                                                                                                                                                                                                                                                                                                                                                                                   0; Gaps
                                                                                                                                                                                                                                                                                                                                                DB 3; Length 19307;
                                                                                                                                                                                                                                                                                                                                            Query Match 87.3%; Score 1135.2; DB 3; Length:
Best Local Similarity 92.1%; Pred. No. 0;
Matches 1197; Conservative 0; Mismatches 103; Indels
                                                                          31,215
ER: GNVPN.008PCT
  APPLICATION NUMBER: US 08/331,381
              ATTORNEY AGENT INFORMATION:
NAME: Bak, Mary INFORMATION:
REGISTRATION NUMBER: 31,215
REFERENCE/DOCKET NUMBER: GNVI
TELECOMMUNICATION INFORMATION:
TELEPAN: 215-540-9200
INFORMATION FOR SEQ ID NO: 10: SEQUENCE CHARACTERISTICS:
LENGTH: 19307 base pairs
TYRE: nucled caid
STRANDEDNESS: double
TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                    , MOLECULE TYPE: CDNA
US-08-836-022A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                            9735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCIGICITITAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cgagacrcaaacaacrrgcrggaccarcccaaaargacagcrcraccagrcrrragc 9495
                                                                                                                                                            3556 galagecertriecriregarererinalecerereaecriecarerateralecerreseceres
                                                                                                                                                                                                                                                                                                                       TAIGHGICIGAACIGGCIGCIGAAIGIITAIGAIACGGGACGAACAGGGAGGAICCGIGI 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccrerchthaaacreecarcarriccrereranaaecacarrigeaaeacaaracae 9855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATACCITITICAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCT-GGGCC 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGG 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rccricracardarrcrarrccaaarrccaagacagradagargaagradcarccrrrdddd 9975
                  rerecaggerecergagagagagecareregecaaacaaagraeceraerareaaca 9435
                                                                                                                                                                                                                                                                                          960
                                                                                                                                                                                                                                                                                          CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                         TATTTATGACCGCCTGGAGCAAGAGCACACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                             TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                         CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
APPLICANT: Trustees of the University of Pennsylvania APPLICANT: Wilson, James M. APPLICANT: Wilson, James M. APPLICANT: Wilson, James M. APPLICANT: Chen, Shu-Jen APPLICANT: Chen, Shu-Jen APPLICANT: Chen, Shu-Jen APPLICANT: Watthew TITLE OF INVENTION: Improved Adenovirus Virus and NUMBER OF SEQUENCES: 10 CORRESPONDENCE ADDRESS: ADDRESSE: Howson and Howson STREET: Spring House Corporate Chtr, P O Box 457 CITY: Spring House STREET: COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9976 gcagraacarrgagccaagrerccagagcrgcrrccaarrrg 10017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONFUTER READABLE FORM:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPATIBLE
COMPUTER: PatentIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE:
FLING DATE:
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ESULT 3)
IS-08-836-022A-10/c
IS-08-836-022A-10/c
Sequence 10, Application US/08836022A
Patent No. 6001557
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1260
                        9376
                                                                                                9436
                                                                                                                                                                             9496
                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                   9196
                                                                                                                                                                                                                                                                                                                                                                                                                9676
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1081
                                                             721
                                                                                                                                        781
                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                         961
```

g à 셤 ò В à d 8 ð

ò 셤 ò g à

```
5857 certricgaaceragagaacteraceagagececagagaactecerecagaaga 5798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5797 derchghandreactedderecthedhahdehddeidhahdderehahddahdda 5738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACTC 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5677 caggaacricaggaagcrgccgargaacrggaccrcaagrigcgccaagcrgaggrgarc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                542 CTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5377. CAGCTGCATGGAGCCCACAGGGACTTTGGTCCTGCATCCCAGCACTTCCATTCACTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGACCCAAACCACTTGTTGGGACCACCCCAAATGACAGAGCTCTACCAGTCTTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACCTGAATAATGTCAGGTTCTCCGCGTATAGGACTGCCATGAAGCTCCAGAAGGCTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     302 CAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCCAAGCTGAGGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362 AAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCCAAGATCACCTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           selv Aadadarccraccadradadaarcracrarraacrarcracaadarcaccrraa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                482 GACCITGCTCGCCAGCITACCACTITGGGCATTCAGCTCTCACCGTATAACCTCAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5497 GACCTTGCACATCAGCTGACCACACTGGGCATTCAGCTCTCACCTTATAACCTCAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      662 GTCCAGGGTCCCTGGGAGGAGGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                   2 GACTITICCAGCAGITICAGAAGCAGAACGAIGIACAIAGGGGCCITICAAGAGGGAAITIGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                        5977 GATITCCCAGCAGIICAGAAGCAGAATGATATACATAGGGGCCTTCAAGAGGGAATIGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                             Length 19307;
                                                                                                                                                                                                                                                                                             Query Match

87.3%; Score 1135.2; DB 3; Length
Best Local Similarity 92.1%; Pred. No. 0;
Matches 1197; Conservative 0; Mismatches 103; Indels
GNVPN.008PCT
           TELECOMMUNICATION INVORMATION:
TELEPHONE: 215-540-9200
TELEPAT. 215-540-9200
TELEPAT. 215-540-9200
TELEPAT. 215-540-9818
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 19307 base pairs
TYPE: nucleic acid
STRANDENESS: double
TOPOLOGY: unknown
MOLECULE TYPE: cDNA
SEQUENCE DESCRIPTION: SEQ ID NO: 10:
US-09-427-046A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             જે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                                                                                                                                                            4898
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261
                                                                                                                                                    5078
                                                                                                                                                                                                                                      5018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                   ATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTC 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4718
                                                                                                           901
                                                                                                                                      CTGTCTTTTAAAACTGGCATCATTTCCCTGTGAAAGCACATTTGGAAGACAAGTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITCIGCAIGAITCIAITCAAATCCCAAGACAGTIGGGTGAAGTIGGCTICCIITGGGGGC
                                                               5197 gaccigaaraardrcaggriciccccgraragaacigccargaagcicagaagciccag
                                                                                                           AAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCAC
                                                                                                                                                                                           902 AACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACT
                                                                                                                                                                                                                                      5077 AACCICAAGCAAAIGACCAGCCCAIGGAIAICCIGCAGAIAAIIAACIGIIIGACIACA
                                                                                                                                                                                                                                                                                 962 ATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGAT
                                                                                                                                                                                                                                                                                                                      5017 ATTTATGATCGTCTGGAGCAAGACCAACAATCTGGTCAATGTCCCTCTCTGTGTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 crercitititaaaacrescarcarrircrerereraaascacacresaasacaastacas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACCITITICAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4837 TACCTTTTCAAGCAAGTGGCAAGTTCAACTGGCTTTTGTGACCAGCGTAGGCTGGGTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGC
                         GACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/427,048A

FILING DATE: 21-Oct-1999

CLASSIFICATION AND AND PATA:

APPLICATION DATA:

APPLICATION NUMBER: 08/836,022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 10, Application US/09427048A
Patent No. 6203975
GENERAL INFORMATION:
APPLICANT: Trustees of the University of Pennsylvania APPLICANT: Trustees M. Fisher, Xrishna J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTAACATTGAGCCGAGTGTCAGGAGCTGCTTCCAATTTG 4678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1262 AGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FIBLE. Chen, Shu-Jen
Chen, Shu-Jen
Weitzman, Matthew
TITLE OF INVENTION: Improved Adenovirus Virus and
Methods of Use Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSE: Howson and Howson
STREET: Spring House
CITY: Spring House
STATE: Pennsylvania
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Bas, Mary E.
REGISTRATION NUMBER: 31,215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
US-09-427-048A-10/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4717
                                                                                                                                                                                                                                                                                                                                                                        1022
                                                                                                               842
```

5678

ö

5618

361

5558

481

421

5498

541

5438

601

5378

661

5318

721

5258

5198

781

Ŋ

⋩

ન્ ⋩

ò 8 ò	2 GACTTICCAGCAGTTCAGAAGGAACGAIGTACATAGGGCCTICAAGAGGGAATTGAAA 61
8	ACTARAGAACCIGIAATCATGAGIACTCTTGAGACTGTACGAATATTTCTGACAGAGCAG
qa	3566 GAGAAAGATATTCTGTCCTGAATGCTGTCGACCAGGCCCGAGTTTTCTTGCTGATCAG 3625
oy qu	122 CCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCT 172
oy Q1	173 GAGGAGAGAGAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT 232
O, Db	233 GAGTGGGAAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGCCTT 292 3746 AAATGGGAAAGTCTAAATGCTGTAACTAGCAATTGGCAAAGGCAAGTGGACAAGGGCATTG 3805
ço Dp	293 GAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCT 352
. Qy	353 GAGGIGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT 412
, qa	413 CACCTCGAGAAAGTCAAGGGACTTCGAGGAAATTGCGCCTCTGAAAGAAA
\tag{6}	473 CACGICAAIGACCITGCICGCCAGCITACCACITITGGGCAITCAGCICTCACCGTAIAAC 532
% 60	
<i>≿</i> 8	
	TCCACGTCTGTCCAGGGTCCTGGGACAGAGCCATCTCGCCAAACAAGTGCCCTACTATTCTACACTAACAAGTGCCGTACTATTCACATAATAAAGTGCCTATTACTACATAATAAAGTGCCCTATTAC
, vo e	
Qy Db	833 AGACTGCAGAAGGCCCTTTGCTTGGALCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTG 892
O QQ	893 GACCAGCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGT 952
λ Q	953 TIGACCACTATITAFGACCGCCTGGAGCACAGCACACAATTTGGTCAACGTCCCTCTC 1012
የዕ	1013 TGCGTGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACGGAGG 1072
8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6	

φ

Page

g à d

쉽 à 임 ે

ò

```
8801 reretreararererenarresrrecrearererareacaceceaacacaaaa 8860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCCGTGTCCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGAC 1132
                                                           021 AAATGGGAAAGTCTAAATGCTGTAACTAGCAATTGGCAAAAGCAAGGTGGACAAGGCATTG 8080
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2201 cacarrdaaaaaarcardacarrrradadaadaarrriccaccaarcaacrrraaagiraaa 8260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cecerraaacaecrrcaesaaseccacasaaarririssaccarecrereassarrirere 8440
                                                                                                                                                                                      1881 GAGAAACTCAGAGACCTGCAGGAGCTATGGATGACCTGGACGCTGACATGAAGGAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8741 CTGACAACAACTTATGATGGACTTGAGCAAATGCATAAGGACCTGGTCAACGTTCCACTC
                                                                                                                                                                                                                                                                                                             GAGTCCGTGCGGAATGGCTGGAAGCCCGTGGAAACTTACTCATTGACTCGCTGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2261 Acceirchaicarrianceaercaecienciceaciroacciecarceircreaaaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8441 retacercacica de rececerca de acada de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra dela contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra dela contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra de la contra del contra de la contra del la contra de la contra de la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra del la contra 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAACCACGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3621 AGACTACAAAAAGCACTATGTTTGGATCTTTAGAGTTGAGTACAACAAATGAAATTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TIGACCACTATITATGACCGCCTGGAGCAAAAGACAAATTIGGTCAACGTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCGTGGATATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8861 ATTAGAGTGCAGAGTCTGAAGATTGGATTAATGTCTCTCCAAAGGTCTCTTGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGTACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGGCCTCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cheeeccremacracareareccarceaearecceeceecaecraeereaaraecaeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACCAGCACAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3681 AAACAGCACAAGTTGAACCAAAATGACCAGCTCCTCAGTGTTCCAGATGTCAACTGT
                                                                                                                                                                                                                                                                                                                                                                                             CACCICGAGAAAGICAAGGCACTICGAGGAGAAATIGCGCCTCTGAAAGAGAACGIGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rcrceccaecracarcarcararareccarceaactrrracaccarcarcarcarcar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arcaaccarcaaacacaaccaccierressaccarccraaaarsacsaacrcrrrcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGACTGCAGAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTG
GAGTGGGAAAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTT
                                                                                                                                                                                                                                                               GAGGTGATCAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COAGTCAGGCAGCTGCATGAAGCCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTTTAGCTGACTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITGGGGCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAA 1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rrregaegerarararreaeceraererreseaecrecriceaa 9085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9041
                                                                                                                                                                                                                                                                   353
                                                                                                                                                                                                                                                                                                                                  8141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8321
                                                                                                                                                                                                                                                                                                                                                                                                 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                    8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dangincascorradacorcoagrandacoarreraadecoordagacedeagrinaade 7840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4586 ATTAGAGTGCAGAGTCTGAAGATTGGGATTAATGTCTCTCCAAAGGTCTCTTGGAAGAA 4645
                                                                                                            1133 AAGTACAGATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGG 1192
                                                                                                                                                                                                                                                                                                  creseccierracircardareccarceagarececesecaserassisaasirascaser 4765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTTGGAAGGACTAGAGAAACT-----CTACCAGAGACCCAGAGAGCTGCCTCCT 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7841 GAGAAAGATATTCTGTCCTGAATGCTGTCGACCAGGCCCGAGTTTTCTTGGCTGATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTAAAGAACCIGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccaatroagoccccroaagagccaagaagaaaccracaarcaaaaacagaarraacrocr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGAGAGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACTITICCAGCAGITICAGAAGCAGAACGAIGIACAIAGGGGCCTICAAGAGGGAATIGAAA
                                                                                                                                                                 <u> aaaracadararcrerraaddaaddreddddddaadargreddddddaadd</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Description of Artificial Sequence: Full length OTHER INFORMATION: utrophin construct
FEATURE:
NAME/KEY: misc_feature
LOCATION: (724)..(758)
OTHER INFORMATION: Precise residue is left open
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 10320;
                                                                                                                                                                                                                                                                                                                                                                                                                                    ririgeaescasinararireascerasistroscascriscriccaa 4810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
42.6%; Score 553.8; DB 4;
Best Local Similarity 64.7%; Pred. No. 1.5e-169;
Matches 844; Conservative 0; Mismatches 452;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INC. 0516413.

GENERAL INCRATION:
APPLICANT: Tinsley, Jonathon M
APPLICANT: Tinsley, Jonathon M
APPLICANT: Davies, Kay E
TITLE OF INVENTION: Utrophin gene expression
FILE REFERENCE: 620-42
CURRENY APPLICATION NUMBER: US/09/091,501B
CURRENY FILING DATE: 1996-06-18
PRIOR APPLICATION NUMBER: PCT/GB96/03156
PRIOR APPLICATION NUMBER: GB 9525962.8
PRIOR APPLICATION NUMBER: GB 9615797.9
PRIOR FILING DATE: 1995-12-19
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-07-26
PRIOR FILING DATE: 1996-10-24
NUMBER OF SEQ ID NOS: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 9, Application US/09091501B
Patent No. 6518413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: CDS
LOCATION: (11)..(10312)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 9
LENGTH: 10320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-091-501B-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7781
                                                                                                                                                                           4646
                                                                                                                                                                                                                                                                                                      4706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1961
                                                                                                                                                                                                                                          1193
                                                                                                                                                                                                                                                                                                                                                                        1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    173
```

D

ö

ò D à d δ

```
1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1560 Tridahccrastranaccacacacacacacacacacacacacacataranas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1800 Acrescarrecarectricrerecaeseaarisaaseaaaaareaaaaacareaaraeerrecrerrease 1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1860 caagiggccaacricaggcagccagrgrgaccagccaccaccarccargergrccargactroargag 1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTCCTTCTGCATGAT 1213
                                                                1380 İdGGAAAGAGCAATTCACCCAATAAAGTTCCCTACTACATCAACCACCAGGCTCAGACC 1439
                                                                                                                                                                                                                  913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1740 rescrecrearerrirariares de rescesares da rescretaria de con rescribiraria de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de construira de cons
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCACAACCTCAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620 Agricaccacgricaricariogareracidaricaritaricariogeneracidarionarionales
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1680 riegaggaggaggaggarccregrearceresidareares
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTCCTGTCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGATACCCTTTTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1214 TCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGGCAGTAACATTGAG
                                                                                                                                                                                                                                                                                                                     794 GICAGATICICAGCITATAGGACTGCCATGAAACTCCGAAGGCTGCAGAAGGCCCTTTGC
                                                                                                                                                                                                                                                                                                                                                                                              1500 ATTAAGTTCTCAGCTTATCGCACTGCCATGAACTCCGCAGAGTCCAGAAAGCCCTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACTATTTATGACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: SCHEIFLINGER, F.
APPLICANT: SCHEIFLINGER, F. APPLICANT: SCHEIFLINGER, F. G.
TITLE OF INVENTION: RECOMBINANT FOMLPOX VIRUS
NUMBER OF SEQUENCES: 52
CORRESPONDENCE ADDRESS: 52
CORRESPONDENCE ADDRESS: ADDRESS: ROLE SOU
CITY: Alexandria
STREET: 1800 Diagonal Road, Suite 500
CITY: Alexandria
STREET: 12313-0299
CONTRY: USA
COUNTRY: USA
ZIP: Z21313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM C Compatible
COMPUTER: ISM C Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1980 cccadidroceractrocerrin 2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 14, Application US/08232463
Patent No. 5670367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
US-08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1274
                                                                                                                                                                   734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       914
                                                                                                                                                      ò
                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                    GENUM.

13. 19. 976-594-93

Sequence 93, Application US/09976594

Patent No. 667349

Patent No. 667349

Patent No. 667349

Patent No. 667349

Patent No. 667349

Patent No. 667349

PAPLICANT: Furness, Michael

APPLICANT: Purness, Michael

APPLICANT: Purness, Michael

APPLICANT: Purness, Michael

APPLICANT: Purness, Michael

APPLICANT: Purness, Michael

APPLICANT: Buchhinder, Jenny

TILE REFERENCE: PA-0041 US

CURRENT APPLICATION NUMBER: US/09/976,594

CURRENT FILING DATE: 2001-10-12

PRIOR APPLICATION NUMBER: 60/240,409

PRIOR FILING DATE: 2000-10-12

NUMBER OF SEQ ID NOS: 1143

SOFTWARE: PROGRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             962 cecrenenedaccaccaccarcacatreaccedacreredaccacrerredacatrea- 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .021 -gġġġċanġagagaacnaacacnacnchagcaachagchagagagrcagachag 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .080 gadoccarradadarcrorroarrantarrocrocadadacarccadacrarraadara 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1140 TICAAAGAAGAATICTCCCCAIGAAAGAIGGAGIAAAGTIGGIGAATGATCIGGCCCAC 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .200 caacitigccarricidargiecacrigicaargeagaartccaggccciggaacagarc 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .260 AACGTCCGATGGAAACAACTACAGGCGTCAGTTGATGAGAGGCTTAAGCAGCTCCAGGAT 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       314 GAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGG 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTG 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134 CTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAATGTC 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACTCCGCTGACTGGCAGAGAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374 CAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGAGAAGTCAAGGCA 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      554 AACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAA 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74 GIBAICAIGAGIACICITGAGACIGIACGAAIRITICIGACAGAGCAGCCITIGGAAGGA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194 ACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTG 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   902 Agccectificiaricanaccadecaceereeccacidanacreficeeanaaricace 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               722 grachacaddadaddadacacaracaddcrirrarddaagaagrcaagrcregddecee 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     782 TACATCTATTCTGTGCTGGAGTCAGCTCTGCCTTCCTGTCCCAGCACCATTTGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        842 Tradadeagecrearrerdadageaachaadaracereeegaaachdegareehdaaree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             434 CTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTTCCACGTCTGTCCAGGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14 GITCAGAAGCACAACGAIGATGIACAIAGGGCCITCAAGAGGGGAAITGAAAAACIAAAGAACCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gabs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
41.5%; Score 540.2; DB 4; Length 3915;
Best Local Similarity 64.3%; Pred. No. 2.3e-165;
Matches 827; Conservative 0; Mismatches 458; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAWE/KEY: misc feature
OTHER INFORMATION: Incyte ID No. 6673549 290344.1
IS-09-976-594-93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    254
```

≿ ŏ উ

Ö ≿ ≿

```
1733 TGGGAGGAAGCTTACACAGCAGATGGAATCAAGTACTTCATCAACCACGTGACACAGACC 1792
                                                                                                                                                                                                                                                                                                                                                                                                                1793 Acgrecidoarteacececagardacocecidaacerorererororos adagadas 1852
                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                115 ecrecciangecarecidadadadadadadadan 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     418 CGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGT 477
                                                                                                                                                              674 TGGGAGAGGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 733
                                                                                                                                                                                                                                                                                                                                          734 ACTIGCIGGGACCAICCCAAAAIGACAGAGCICITACCAGICITIAGCIGACTGAATAAI 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361 CAAGGGA---TOCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCT 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chahahahancchechechechechehahrccahechacharedecchechehendaher 234
                                                                               Gaps
                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4; Length 1690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42.8; DB 4; Length 1
Pred. No. 0.0023;
0; Mismatches 167; Indels
1853 caggacrigreceagagagacraacagacegaaagergarg 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  794 GICAGAIICICAGCITAIAGGACIGCCAIGAAACICCGAAG 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Dramanac, Radoje T.
TITLE OF INVENTION: No. 65696621 Nucleic Acids and
TITLE OF INVENTION: No. 656966221 Nucleic Acids and
TITLE OF INVENTION: Polypeptides
FILE REFERENCE: 784CIP2B
CURRENT APPLICATION NUMBER: US/09/620,312D
CURRENT FILING DATE: 2000-07-19
PRIOR FILING DATE: 2000-04-25
PRIOR FILING DATE: 2000-01-21
NUMBER OF SEQ ID NOS: 1105
SOFTWARE: PL-L-genes Version 1.0
LENGTH: 1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09620312D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.0 3.3%;
Best Local Similarity 47.9%;
Matches 156; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yang, Yonghong
Wang, Jian-Rui
Zhou, Ping
Ma, Yunqing
Wang, Dunrui
Wang, Zhiwa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Tang, Y. Tom
APPLICANT: Liu, Chenghua
APPLICANT: Asundi, Vinod
APPLICANT: Zhang, Jie
APPLICANT: Chen, Feiyan
APPLICANT: Chen, Rui-hong
APPLICANT: Zhao, Qing A.
APPLICANT: Mehrman, Tom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | FEATURE:
| NAME/KEY: CDS
| LOCATION: (128)..(1522)
| US-09-620-312D-69
                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xue, Aidong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA ORGANISM: Homo sapiens
                                     Best Local Similarity
Matches 88; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-620-312D-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        С
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \stackrel{\diamond}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 10, Application US/09668313A
Sequence 10, 650376
GENERAL INFORMATION:
APPLICANT: Brett P. Monia
APPLICANT: Sugan M. Freier
APPLICANT: Jacqueline Wyatt
TITLE OF INVENTION: ANTISENSE MODULATION OF SYNTAXIN 4 INTERACTING PROTEIN EXPRESSION
CURRENT APPLICATION NUMBER: US/09/668,313A
CURRENT FILING DATE: 2000-09-22
NUMBER OF SEQ ID NOS: 247
SEQ ID NO 10
LINGTH: 2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 1111 | 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACT 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258 CCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGG 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138 AGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCAGAATGTCACTC 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18 AGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAACCTGTAA 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 2574;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
3.8%; Score 50; DB 1; Length 7218;
Best Local Similarity 4.2%; Pred. No. 2.7e-05;
Matches 14; Conservative 191; Mismatches 131; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081 RRRRRRRRRRRRRATGGCAAGCTCCCTCGACCTG 1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  318 CCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTG 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                   30472/114 IMMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.4%; Score 44.2;
                                                                                                 EP 91 114 300.6
         FILING DATE:
APPLICATION NUMBER: EP 91 114 3
FILING DATE: 26-AUG-1991
ATTORNEN/AGENT INPORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 30472
TELECOMMUNICATION INPORMATION:
TELEPHONE: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA: (703)836-9300
TELEFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ) NAME/KEY: CDS
) LOCATION: (218)...(1891)
US-09-668-313A-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , CLONE: pTZgpt-F1s
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
```

g ò

8

ò 쉽 셤

8

à

σ

ģ ≿ ă ≿

```
Sequence 3, Application US/08425069
; Sequence 3, Application US/08425069
; Patent No. 5728810
; GENERAL INFORMATION:
    APPLICANT: Lewis, Randolph V.
    APPLICANT: Lewis, Randolph V.
    APPLICANT: AN Ming
    APPLICANT: Hinman, Michael B.
    TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
    TITLE OF INVENTION: ISOLATED DNA, AND PRODUCTS THEREOF NUMBER OF SEQUENCES:
    NUMBER OF SEQUENCES:
    ADDRESSE: Birch, Stewart, Kolasch & Birch
    STREET: 301 No. 5728810th Washington Street
    CONTY: Falls Church
    STATE: Virginia
    COUTNY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGAGCCCCAGAAT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251 CTGCACTCCGCTGACTGGCAGAGAAATAGATGAGACCCTTGAAAGACTCCAGGAACTT 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71 CCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAA 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       851 GACCTGGAGGATATGGCCCTGGACAACAAGGACCGGAGGATATGGACCAGGACAACAAG 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAAC 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           911 GACCATCTGGAGCAGGCAGTGCAGCAGCAGCAGCCGCAGGACCTGGACAAGGAT 970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               791 caggacaacaaccarciggacccegrageccccriccacacacacccccccccccaccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11 GCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tch 3.0%; Score 38.6; DB 1; Length 1 al Similarity 44.0%; Pred. No. 0.061; 164; Conservative 0; Mismatches 209; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER RELABBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Elab PC Compatible
COMPUTER: DEM PC Compatible
COMPUTER: DEM PC Compatible
COMPUTER: DEM PC COMPUTER:
COMPUTER: DEM PC COMPUTER:
COMPUTER: DEM PC COMPUTER:
APPLICATION NUMBER: US/08/425,069
FILING DATE: 19-APR-1995
CLASSIFICATION: 435
ATTONNEY/AGENT INFORMATION:
NAME: MUTPHY JT., Getald M
REGISTRATION NUMBER: 28,977
REPERENCE/POCKET NUMBER: 28,977
REPERENCE/POCKET NUMBER: 1447-106P
TELECOMMUNICATION INFORMATION:
TELEPAK: (703) 205-8000
TELERAK: (703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 1995 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ) NAME/KEY: CDS
) LOCATION: 1..1785
US-08-425-069-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: CDNJ
HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3639 caadeagriigcaccaddreedecacacaccidaacaacaacaacaacareearradarraadaadce 3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3699 gcráccacradicardcadadadogadecaadeerriocaddogicadocadadar 3758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3879 egecériégágezácitácágágéeerriágaeceggaériácagágágágértécégágeaavésen 3938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 CCAGGAACTICAAGAGGCCACGGAIGAGCIGGACCICAAGCIGCGCCAAGCIGAGGIGAI 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                418 CGAGAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGT 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    478 CAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAG 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361 CAAGGGA---TCCTGGCAGCCCGTGGCGATCTCCTCATTGACTCTCCAAGATCACCT 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        538 CACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGT 597
                                                                                                                                                                        538 CACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGT 597
        478 CAATGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAG 537
                                                                                                                                                                                                                                                   295 esecciréciacidade de cada de contra de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cada de cad
                                                                                        235 geregadecececededececirederecrieciócecadecegadecadecadecede
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.3%; Score 42.8; DB 3; Length 7812;
47.9%; Pred. No. 0.0063;
trive 0; Mismatches 167; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: INTERACTING POLYPETIDES FOR TITLE OF INVENTION: INTERACTING POLYPETIDES FOR TITLE OF INVENTION: AUTOANTIGENS OF AUTOIMMUNE DISEASES FILE REFERENCE: 101918-200 (OCR-941)
CURRENT PILING DATE: 1999-08-04
EARLIER PILING DATE: 1999-08-04
EARLIER PILING DATE: 1998-08-07
NUMBER OF SEQ ID NOS: 8
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 1
LENGTH: 7812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3939 gcaderecresaceceeecrecade 3964
                                                                                                                                                                                                                                                                                                                                                                                                                            355 gcaderéciesaceceéerrecade 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            598 CAGGCAGCTGCATGAAGCCCACAGGG 623
                                                                                                                                                                                                                                                                                                                                            598 CAGGCAGCTGCATGAAGCCCACAGGG 623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/09368590 Patent No. 6187563 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 47.98
Matches 156; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ...(1023)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: unsure
LOCATION: (2266)...(2268)
JS-09-368-590-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..(102)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (1)...(6
NAME/KEY: unsure
LOCATION: (100)...
NAME/KEY: unsure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION: (1021)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: CDS
LOCATION: (1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
```

⋩

ă ≿ ⋩

Gaps

ద ઠે 셤

8

```
GENERAL INCORMATION:
APPLICANT: Shyjan, Andrew W.
APPLICANT: Shyjan, Andrew W.
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION: OF PROSTATE CANCER THERAPIES AND THE DIAGNOSIS OF PROSTATE CANCE FILE REFERENCE: 07334-074001
CURRENT APPLICATION NUMBER: 0509/220,132
CURRENT APPLICATION NUMBER: US 60/079,303
PRIOR APPLICATION NUMBER: US 60/079,303
PRIOR FILING DATE: 1998-03-25
PRIOR APPLICATION NUMBER: US 60/068,821
PRIOR FILING DATE: 1997-12-24
NUMBER OF SEQ ID NOS: 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sssi Agarcaagacriccederaecerecaacéeraeaceregerraecardeagesecerée
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1031 chachdeanhreancaeanachachachachachachachachachachachan 1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    971 Taggaggttatggadcaagaacaacaagactccaggagatatggaccaggacaagact 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               375 AGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGAGAAAGTCAAGGCAC 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        555 ACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAG 614
                                                                                                                                                                                                                                    GTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAAAAATTGAAC 250
                                                                                                                                     вът съсстось се пресста съвет пресста в пресста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста преста пре
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGA
                                                                                                                                                                                                                                                                                                                                         251 CTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              311 CAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              435 TTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCC
                                          GGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAAGCCCAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
3.0%; Score 38.4; DB 4; Length 7
Best Local Similarity 47.2%; Pred. No. 0.17;
Matches 117; Conservative 0; Mismatches 131; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NOS: 191
FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
US-09-668-313A-3
; Sequence 3, Application US/09668313A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 09-220-132-24
Sequence 24, Application US/09220132
Patent No. 6506607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1091 AAGGACCAGGAGG 1103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        371 TGGCAGCCCGTGG 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5671 AACAGCGG 6678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  615 CCCACAGG 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER: FAST:
SOFTWARE: FAST:
SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-220-132-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              495
                                                     131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                    ઠે
TAGGAGGITATGGACCAGGACAACAAGGICCAGGAGGATAIGGACCAGGACAACAAGGIC 1030
                                                                                                                                                                                                    1031 caggagagararggaccaggragrecarcrecagcagcagccgcagcaggaccagcregacaac 1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  731 GCAGTGCAGCTGCAGCAGCCGCAGCAGCTGGACAACAAGACCCGGAGGATATGGAC 790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71 CCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAA 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caggacaacaaccarcrocadeccegragececrocadecadeacadeccececadead
                                                                                                     CAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCAGCTGAGGTGATCAAGGGATCC 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Lewis, Randolph V.
APPLICANT: Xu, Ming
APPLICANT: Xu, Ming
APPLICANT: Xu, Ming
APPLICANT: Aliman, Michael B.
TITLE OF INVENTION: ISOLATED DNA CODING FOR SPIDER SILK
TITLE OF INVENTION: PROTEIN, A REPLICABLE VECTOR AND A TRANSFORMED CEL
TITLE OF INVENTION: CONTAINING THE ISOLATED DNA, AND PRODUCTS THEREOF
NUMBER OF SEQUENCES: 62
CORRESPONDENCE S.
SITREST: SILO, STEWART, Kolasch & Birch
STREET: 301 No. 5989894th Washington Street
CITY: Falls Church
STATE: Virginia
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 GCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAAACTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.0%; Score 38.6; DB 2; Length 1995; 44.0%; Pred. No. 0.061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPOTER: IBM PC compatible
COMPOTER: IBM PC compatible
COMPOTER: IBM PC compatible
CONFURE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/317,844B
FLING DATE: 04-0CT-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: MUTENY Jr. (Gerald M
REGISTRATION NUMBER: 1447-105P
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3, Application US/08317844B Patent No. 5989894
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEX: 248345
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1995 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                         1091 AAGGACCAGGAGG 1103
                                                                                                                                                                                                                                                                                                               TGGCAGCCCGTGG 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 44.0
Matches 164; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY:
; LOCATION:
US-08-317-844B-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-317-844B-3
                                                                                                               311
                                                                                                                                                                                                                                                                                                               371
```

ठे g $\dot{\delta}$

```
GENERAL INFORMATION:
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: Brett P. Monia
APPLICANT: ANTERNER
APPLICANT: ANTERNER
APPLICANT: ANTERNER
ANTERNER: NANTERNER: US/09/668,313A
CURRENT APPLICATION NUMBER: US/09/668,313A
CURRENT APPLICANTON NUMBER: US/09/668,313A
CURRENT APPLICANTON NUMBER: US/09/668,313A
CURRENT APPLICANTON NUMBER: US/09-22
TURENT: ANTERNER: US/09/668,313A
ACANISM: Homo sapiens
FEATURE:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANANTERNER:
ANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  674 TGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACA 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        734 ACTIGGIGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGCTGACCTGAATAAT 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13 TGGGAGGAAGCTTACACAGCAGATGGAATCAAGTACTTCATCATCATGTAACACAGACT 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
2.9%; Score 38.2; DB 4; Length 428;
Best Local Similarity 55.7%; Pred. No. 0.03;
Matches 73; Conservative 0; Mismatches 58; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Search completed: April 5, 2004, 08:24:56 Job time : 65.0939 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               133 ŚAGGATÍGĆÍĆ 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         794 GTCAGATTCTC 804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ਨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ਨੇ
```

Sequence Sequence Sequence

Sequence Sequence Sequence

Sequence 40, Appl Sequence 10, Appl Sequence 5, Appli Sequence 28, Appli Sequence 7, Appli Sequence 7, Appli Sequence 11, Appli Sequence 12, Appli Sequence 13, Appli Sequence 13, Appli Sequence 67, Appli Sequence 67, Appli Sequence 67, Appli Sequence 67, Appli Sequence 67, Appli Sequence 67, Appli Sequence 67, Appli Sequence 67, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 10, Appli Sequence 11, Appli Sequence 10, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli

'n

```
Sequence 14, Application US/09845416 *
Publication No. US20030171312A1
GENERAL INFORMATION:
APPLICANT: XIAO, XIAO
TITLE OF INVENTION: THEREOF
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT FILING DATE: 2001-04-30
FRIOR APPLICATION NUMBER: 60/200,777
FRIOR APPLICATION NUMBER: 60/200,777
FRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      900 GAGCTATGCCTACACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1020 reaagraaaccreeaccerrarcaacaecrrraeaagaagrarrarcereecrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 10; Length 3446;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Indels
S US-10-341-434-108

0 US-09-845-416-1

0 US-09-845-416-3

0 US-09-845-416-29

0 US-09-845-416-29

0 US-09-845-416-29

0 US-09-845-416-36

5 US-10-149-736-2

5 US-10-149-736-2

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09-845-416-3

0 US-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-220-120-157
US-09-864-761-21956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1601; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIGNMENTS
          114082
190958
190958
190958
190958
190958
190958
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
19095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
CRGANISM: Homo sapiens
US-09-845-416-14
          US-09-845-416-14
      1091
1087.8
1085.8
863
                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 32, Appl
Sequence 39, Appl
Sequence 31, Appl
Sequence 21, Appli
Sequence 27, Appli
Sequence 42, Appli
Sequence 42, Appl
Sequence 44, Appl
Sequence 22, Appl
Sequence 22, Appl
Sequence 22, Appli
Sequence 24, Appli
Sequence 434, Appli
Sequence 434, Appli
Sequence 434, Appli
Sequence 434, Appli
                                                                                                                                                                                                                               April 5, 2004, 04:53:30 ; Search time 388.214 Seconds (without alignments) 15454.047 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                              US-09-845-416-14_COPY_900_2500
1601
1 gagctatgcctacacacagg......taccagtctttagctgacct 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Published Applications NA:*

1: /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT_MBW_PUBLseq:*
3: /cgn2_6/ptodata/2/pubpna/PCT_MBW_PUBLseq:*
4: /cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
5: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
6: /cgn2_6/ptodata/2/pubpna/US08_NBW_PUBLseq:*
7: /cgn2_6/ptodata/2/pubpna/US08_NBW_PUBLseq:*
8: /cgn2_6/ptodata/2/pubpna/US08_NBW_PUBLSeq:*
9: /cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/US09_NBW_PUBLSeq:*
12: /cgn2_6/ptodata/2/pubpna/US09_NBW_PUBLSeq:*
13: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
14: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
15: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
16: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
17: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
18: /cgn2_6/ptodata/2/pubpna/US60_NBW_PUB.seq:*
                                            GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-845-416-14
US-09-845-416-32
US-09-845-416-32
US-09-845-416-32
US-09-845-416-27
US-09-845-416-27
US-09-845-416-27
US-10-149-736-42
US-10-149-736-44
US-10-149-736-42
US-10-149-736-42
US-10-149-736-42
US-10-149-736-42
US-10-149-736-42
US-10-149-736-42
US-10-149-736-42
US-10-149-736-42
US-10-149-736-47
US-10-149-736-47
US-10-149-736-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2470430 segs, 1873665578 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ost-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                        nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linimum DB seq length: 0 laximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3446
4414
4414
4476
61149
11443
113957
113957
114069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1000.0

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

999.3

9
                                                                                                                                                                                                                                                                                                                                                                        'itle:
'erfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1601
1102
11033
11102
11102
11102
11003
11003
11003
11003
11001
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11003
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                               M nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           atabase :
                                                                                                                                                                                                                                                                                                                                                                                                                                         edneuce:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    earched:
                                                                                                                                                                                                                                                о
п
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         esult
No:
```

1019

120

959

9

ö

Gaps

,

1079

180

Db 2160 ATTGCGCCTCTGAAAGAGAACCTCAATGACCTTGCTCGCCAGCTTACCACT 0y 1321 TTGGGCATTCAGCTCTCACCGTATAACCTCTGGAAGACCTGAACACCAGTGG Db 2220 TTGGGCATTCAGCTCTCACCGTATAACCTCTGGAAGACCTGAACACCAGTGG 0y 1381 AAGCTTCTGCAGGTGGCCGTCGAGACCAGAGACCGAGAGGC 0y 1381 AAGCTTCTGCAGGTGGCCGTCGAGACCAGCAGCTCTGGAAGACCCACAGGGAC 0y 1441 TTTGGTCCAGCTCTCAGCACTCTTCCACGTCTGCAGGTCCCTGGGAAGACCC 0y 1451 TTTGGTCCAGCATTCTTTCCACGTCTGTCAGGGTCCCTGGGAAGACCC 0y 1501 ATCTCGCCAACAACAACTTCTTTCAACACTCTGTGGGAAGAGCC 0y 1501 ATCTCGCCAAACAGCTCTACTATAACAACAACAACAACTTGCTGGGAAGACC 0y 1501 ATCTCGCCAAACAACAACTGCCCTACTATATCAACCACAAACTTGCTGGGAAGACC 0y 1501 ATCTCGCCAAAATGACGCCTACTATATCAACCACAGAAACTTGCTGGGAAGACC 0y 1501 ATCTCGCCAAAATGACACAACTTCTTTCAACACACAACTTGCTGGGAAGACC 0y 1501 ATCTCGCCAAAATGACAGACTCTTAACACACAAAACTTGCTGGGAACCAAAATGACAAAATGACAGACTCTTAACACAACAACAAACTTGCTGGGAACCAAAATGACAAAATGACAGACTCTTAACTTTAACTGACAAAACTTGCTGGGAACCAAAATGACAAAATGACAGACTCTTAACTTTAACTGACAACAACTTGCTGGGAACCAAAATGACAAAATGACAGACTCTTAACTTTAACTTCAACAACAAACTTGCTGGGAACCAAAATGACAAAAACAACACAACTTAACTTTAACTGACACAACAAAATGACAAAATGACAGACCTCTTAACTTTAACTTCAACAACAAAATGACTGAACAACAAACTTAACTTTAACTTAAACAACAAACTTGCTGGGAACCAAAATGACAAAATGACAACACTTAACTTTAACTTAAACTTCAAACAACAAAATGACTGAAAATGACAAAAAATGACAAAAATGACAAAAATGACAAAAAAAA	RESULT 2 US-09-845-416-32 iS-09-845-416-32 iSequence 3.2, Application US/09845416 iPublication No. US20030171312A1 iGENERAL INFORMATION: iAPPLICANT: ATAO, XIAO TITLE OF INVENTION: THEREOF FILE REFRENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416 iCURRENT APPLICATION NUMBER: 60/200,777 PRIOR APPLICATION NUMBER: 60/200,777 iPRIOR FILING DATE: 2000-04-28 iNUMBER OF SEQ ID NOS: 36 iSQTWARE: PatentIN Ver: 2.1 iSQTH+444 TYPE: DNA iCORANISM: Homo sapiens	Query Match Best Local Similarity 99.9%; Pred. No. 0; Matches 1601, Conservative 0; Mismatches 0; Indels 1; Gaps Matches 1601, Conservative 0; Mismatches 0; Indels 1; Gaps Qy 1657 GadCTATGCCTACACACACGCTGTTATGTCACCTCTACCCTACACGCACTTTTC Qy 61 TCCTTCACAGCATTTGGAAGACTCCTTAGACACTCTTTGCACGTTCATTGTGAGAGAC Db 1717 TCCTTCACAGCATTTGGAAGACTCCTTAGAAGACATCATTGTGAGAGACCCATTTC Qy 121 TGAAGTAAACTGGACGTTATCAAACAGCTTATTGAAGAAGTATTATCGTGGAGTTCTTTC Qy 181 TGCTGAGGACCATTGCAAGACACACACGCTTTAGAAGAAGTATTATCGTGGATTCTTTC Qy 241 TGCTGAGGACACATTGCAAGACACAGAGATTTTAGAAGAAGTATTATCGTGAAAGAAGA Qy 241 CCAGTTTCATACTCAGAGGGTAAATGATGAAGAAGTATTATCGTGAAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAGAAG
	CCTCTTGGACCTGATCTTGAAGCCTAAAAGCCCAAGTACAACATAAGGTGCTTCAA	

Db 3097 CTTTGGTCCAGCATCTCCAGCACTTTCTTCCACGTCTGTCCAGGGGGGAGGGG 3156 Qy 1500 CATCTGCCAAACAAGGGCCTACTATATCAACCAGGGACTCCAAACAACTTGCTGGGA 1559 Db 3157 CATCTGGCCAAACAAAGGGCCTACTATATCAACCAGGACTCAAACAACTTGCTGGGA 3216 Qy 1560 CCATCCCAAAATGACAAAGGGCTTACCAGCCT 1601 Db 3217 CCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 1601 Db 3217 CCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 3258	RESULT 3 US-10-149-736-39 US-10-149-736-39 US-10-149-736-39 Sequence 39, Application US/10149736 ; Publication No. US20030216332A1 ; GENERAL INFORMATION: ; APPLICANT: Chamberlain, Ueffrey S. ; APPLICANT: Harper, Scott Q. ; TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences ; CURRENT APPLICATION NUMBER: US/10/149,736 ; CURRENT FILLING DATE: 2002-06-17	FRICK AFFLICATION NUMBER: 60/238,948 PRIOR PLING DATE: 2000-10-04 PRIOR PLING DATE: 2000-10-06 NUMBER OF SEQ ID NOS: 96 SOFTWARE: Patentin version 3.1 LENGTH: 5417 TYPE: DNA PRACTICE: CALL OF SECULATION SANDELS PRACTICE: CALL OF SECULATION SANDELS PRACTICE: CALL OF SANDELS PRACTIC	US-10-149-736-39 Query Match Query Match Best Local Similarity 91.0%; Pred. No. 0; Matches 1599; Conservative 0; Mismatches 2; Indels 157; Gaps 2; Qy I GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACGCTACACGCACCATT 60 Dh 1099 GAGCTATGCCTACACACAGGCTCTTATGTCACACACCTTGACGGAGCCCATT 1158	61 1159 121	QY 181 TGCTGAGGACACATTGCAAGCACAAGAGAATTTCTAATGATGTGGAAGTGGTGAAAGA 240 DD 1279 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1338 QY 241 CCAGTTTCATACTCATGAGAGGATACATGATGATGACAGCCCATCAGGGCCGGGTTGG 300 DD 1339 CCAGTTTCATACTCATGAGGGGTACATGATGATTGACAGCCCCATCAGGGCCGGGTTGG 1398	0 0 1
			ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAAA	CCAGAAGACGAAGCATGGCTGCATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA	TGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCTGG	1220 ANTIGOGOCTOTOGARAGA ANTIGOGOCA CONTROL CO

Db 2659 GGACCGAGCTGCATGAAGCCCACAGGACTTTGGTCCAGCATCTCGGCAACTTTGGTCAGCATCTCAGCACTTTGGTCCTGGGAACTTTGGTCCTGGGAACTAACT	US-09-845-416-12 Sequence 12. Application US/09845416 Publication No. US203030173312A1 Publication No. US20330173312A1 APPLICANT: XIAO, XIAO TITLE OF INVENTION: THEREOF FILE REFERENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30 PRIOR APPLICATION NUMBER: 60/200,777 PRIOR PILING DATE: 2000-04-28	NUMBER OF SEQ ID NOS: 36 ; SOFTWARE: Patentin Ver. 2.1 ; SEQ ID NO 12 ; LENGTH: 3510 ; TYPE: DNA ; ORGANISM: Homo sapiens US-09-845-416-12	Query Match Best Local Similarity 84.7%; Pred. No. 0; Batches 1411; Conservative 0; Mismatches 190; Indels 64; Gaps Qy 1 GAGCTATGCCTACACACACGCTGCTTATGTCACCTCTGACCCTACACGGAGCCCATT Db 900 GAGCTATGCCTACACACACGCTGCTTATGTCACCTCTGACCCTACACGGAGCCCATT	Oy 61 TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTGGCAGTTCATTGAAGAGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGA	181 183 1080 1080 241 241	301 301 1200 361	421 1320 480
	AGATICGATGGGCAAACATCTGTAGATGGACAGAAGACCTGGGTGGTGTTTTAGAGACATTGGGCTAGAGACATTGGGCTAGAGACATTGGAGAGACGCTGGGGTTCTTTTAGAGACATTGTAGAGACGAGACGGCTGGGGTTCTTTTAGAGACATTGAGAGACATTGGAGAGACAGAGACGGCTTTTTAGTGGCTTTCAGA 83 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCTTTCAGA 19 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCCTTTCAGA 19 AAAAGAAGATGCAACGAACAGATTCAAAAAATGAAATG	ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 20 ATCAAGTCTTCAAAAACTGGCCGTTTTTAAAAGCGGATCTTGGAAAAAGAAAAGCAATCCAT 20 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 20 GGGCAAACTGTATTCACTCAAACAAGATCTTTTTTTTTCACCTGAAGAATAAGTCAGTGAC 21	CCAGAACACGAAGCATGGCTGGATAACTTTGCCGGGTGTTGGGAATAATTTAGTCCAAAAAAAA	1103	1104 CCTTGAAAGACTCCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCA 1163	1224 AGATCACCTCGAGAAAGTCAAGGCACTTCGAGAAAATTGCGCCTCTGAAAGAAGT 1283	1344 TAACCTCAGCACTCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGA 1403 [

Db 2460 AGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTGCTG 251: Qy 1557 GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACT 1601 Db 2520 GGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCTGACCT 2564	RESULT 5 US-09-845-416-31 Sequence 31, Application US/09845416 Publication No. USZ0030171312A1 Publication No. USZ0030171312A1 GENERAL INFORMATION: APPLICANT: XIAO, XIAO ITILE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 CURRENT PRIOR FILING DATE: 2000-04-28 SOFTWARE: PATENTIN VOIC: 2.1 SEQ ID NO 31 LENGTH: 4476 TYPE: DNA	Ouery Matches 1411; Conservative 0, Mismatches 190; Indels 64; Gaps 45; Best Local Similarity 84.7%; Pred, No. 0, Mismatches 190; Indels 64; Gaps 45; Detail Similarity 84.7%; Pred, No. 0, Mismatches 190; Indels 64; Gaps 7115; Conservative 0, Mismatches 190; Indels 64; Gaps 110; Conservative 0, Mismatches 190; Indels 64; Gaps 110; Conservative 0, Mismatches 190; Indels 64; Gaps 120; In	Qy 600 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACTCA
	600 AGAAGATCTAGAACAAGACAAGTCAGGGTCAATTCTCTCACTCA	ATCRAGICTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAACTGTAATGGGCAAACTGTAATCATTAGGGCAAACTGTAATCATTAGAGAACTGTAATCATTGAAAACTAAAGAACTGTAATCATTAGGGCAAACTGAAACTAAAGAACTGTAATCATTAGGGCAAACTGTAATCATTAGAGAACTGTAACTGAAACTGAAACTGTAACTGAAACTGAAACTGTAACTGAAAGAACTGTAACTGAAAGAACTGTAACTGAAAGAACTGTAACTGAAAGAACTGTAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAGAACTGAAAAGAACTGAAAAGAACTGAAAAGAACTGCTCCTGAAAAACTGAAAAGAACTCAAAAAATTGACCCAAAAATTGACCCAAAAATTGACCCAAAAAATTGAACCAAAAAAAA	1497 AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAACAACTGCTG 1556

à 9 ਨੇ 8 ઠ 셤 ਨੇ g

ď à 원

```
.320 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGAGAGAG 1019
      Sequence 2, Application US/09845416

Publication No. US20030171312A1

GENERAL INFORMATION:

APPLICANT: X1AO, XIAO

TITLE OF INVENTION: THEREOF

TITLE OF INVENTION: THEREOF

TITLE OF INVENTION: THEREOF

TITLE OF INVENTION: THEREOF

CURRENT FILING DATE: 2001-04-30

PRIOR APPLICATION NUMBER: 60/200,777

PRIOR APPLICATION NUMBER: 60/200,777

PRIOR FILING DATE: 2000-04-28

NUMBER OF SEQ ID NOS: 36

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 2.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ccagrircaracterreaegggracargarggarrreaeaccearcagggecegrieg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .380 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        reargaarcragragarcaccaacrecrecriregaagaacaacriaaggarragge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATGAATCTAGTGGAGATCACGCAACTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1020 igaagiaaacciggaccgitarcaaacagciiragaagaagiairarcgiggciiciiic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGITICATACICATGAGGGGTACATGATGGATITGACAGCCCATCAGGGCCGGGTIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCATGGAAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTGAGGACACATTGCAAGCACACAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ï
                                                                                                                                                                                                                                                                                                                                                                                                               Length 4182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      35;
                                                                                                                                                                                                                                                                                                                                                                                                          68.8%; Score 1102; DB 10; 96.9%; Pred. No. 3.9e-312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 96.9
Matches 1134; Conservative
                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                            LENGTH: 4182
  US-09-845-416-2
                                                                                                                                                                                                                                                                                                                                                                       US-09-845-416-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ∂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCCATCTCGCCAAACAAAGTGCCCTACTATCAACCACGAGACTCAAACAACTTGCTG 3275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAATTGCGCCTCTGAAAGAAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAATGACCTTGCTCGCCAGCTTAC 3035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACTCTGGAAGGACCTGAACACCAG 3095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACTTTGGTCCAGCATCTCAGCACTTTCTTTCCACGTCTGTCCAGGGTCCCTGGGAGAG 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geactringerccaccarcicaecactrincrinceacercierccaeecreciedeacae 3215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCACGAGACTCAAAACAACTTGCTG 1556
                                                                                                                                                                     2556 GCAGAACGATGTACÁTAGGGCCTTCAAGAGGGAATTGAAAAACTAAAGÁACCTGTAATCÁT 2615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2616 GAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAGCCTTTGGAAGGACTAGAGAA 2675
                                                                                                                                                                                                                                                                    2436 Trcigaccagicgaagcgicigcaccrrrcriccaggaacricrestgroccianager 2495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----TICACTCAAACAAGATCTICTTTCAACACTGAAG 1005
                                                                                                                                               AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGGTTCTTTTACAAGACAT 779
                                                                                                                                                                                                                                                                                                              840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT 899
                                                                                                                                                                                                                                                                                                                                                                                             959
                      900 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2676 Actictracciadeaecccidadaeaecrocrocrosaeaeaeaecccaeaarercacrosecr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----AAGAGTACAGCACACACTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2796 TGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTCCAGGAACTTCAAGAGGCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGATCAAGGGATCCTGGCAGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2856 ggargagcriggaccricaagcrigcgccaagcrigaggrigarcaagggarccriggcagcccgr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2916 GGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAGAAAGTCAAGGCACTTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACTITIGGGCATICAGCTCTCACCGTATAACCTCAGCACTCTGGAAGACCTGAACACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGGCAGCTGCATGAAGCCCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                              780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2736 TCTACGAAAGCAGGCTGAGGTCAATACTGAGTGGGAAAAATTGAACCTGCACTCCGC
----TAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAAACTTGAA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGACCATCCCAAAAIGACAGAGCTCTACCAGTCTTTAGCTGACCT 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1006 AATAAGTCAGTGACCCAGAAGACGGAAGCATGGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960 GGGCAAACTGTA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3216
                                                                    9
                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
```

g ਨ੍ਹ g $\overset{\sim}{\circ}$ 유 à 8 à g ਨ੍ਹੇ 셤 à 임 ઠ્ઠ 음 à

à 쉱 ጵ 8 ≿ Ą ⋩

1079

180

120 959

9

240

1139

1199

300

360

1259

420

1319

479

1439

539

1499

1559

629

1619

બ્ર ⋩ Ä

```
2616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1019
                                                                                                 2016
                                                                                                                                                                                                                                   2136
                                                                                                                                                                                                                                                                                                   2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2496
                                                                                                                                                                   2076
                                                                                                                                                                                                                                                                                                                                                                     2256
                                                                                                                                                                                                                                                                                                                                                                                                                                       2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2736
                                                                                                                                   420
                                                                                                                                                                                                     479
                                                                                                                                                                                                                                                                                                                                                                                                       629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          839
   300
                                                                     360
                                                                                                                                                                                                                                                                                                                                     599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          899
                       CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                       ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 42, Application US/10149736;
Publication No. US20030216332A1
GENERAL INFORMATION:
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Harper, Scott Q.
ITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences
     CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                 TATTATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                     <u>AACTGAAGTACAAGAGAGGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                   TAGCATGGAAAAACAAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                            TAGCATGGAAAAACAAAGAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                       TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2317 rdargaarcragiggagarcacgcaacrgcrigcrifiggaagaacaacrraaggrarrggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2737 ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA
                                                                                                                                                                                                                                                                     CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ccagaagacggaagcargccrggaraacrrrgcccggrgrrgggaraarrragrccaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTIGAAAAGAGTACAGACACAGACCCTIGAAAGACTCCAGGAACTTCAAGAGGCCACGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAGCTGGACCTCAAGCTGCGCCAAGCTGA 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGITICITGCCTGGCTTACAGAAGCTGA 2826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
US-10-149-736-42
                                                                                                   1957
                                                                                                                                                                                                                                                                                                     2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2497
     241
                                   1897
                                                                                                                                     361
                                                                                                                                                                   2017
                                                                                                                                                                                                     421
                                                                                                                                                                                                                                     2017
                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                       2197
                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                       2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2797
                                                                     301
                                                                                                                                                                                                                                                                     480
                                                                                          유
                                                                                                                                 à
                                                                                                                                                            요 요
                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                       & 8
                                                                                                                                                                                                                                                                                                                              8 g
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                     1919
                                                                                                                                                                                                                                                                                                                                        1920 CCAGAAGACGGAAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1979
                                                                              CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1739
                                                                                                                                        740 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTT 1799
                                                                                                                                                                                                              ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAAGAAAAAGCAATCCAT 1859
                                                                                                                                                                                                                                                                                                                     CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                   ACTIGAAAAGAGIACAGCACAGACCCTIGAAAGACTCCAGGAACTICAAGAGGCCACGGA 1139
                                                                                                                                                                                                                                                                                                                                                                                                                     ACTTGAAAAGAGTACAGCACAGACTCATAGATTACTGCAACAGTTCCCCCTGGACCTGGA 2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1717 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                       GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
1657 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                     CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
TITLE OF INVENTION: THEREOF
FILE REPERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT APPLICATION NUMBER: 0201-04-30
PRIOR PILING DATE: 2001-04-26
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 27
LENGTH: 5149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 5149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 68.8%; Score 1102; DB 10; Best Local Similarity 96.9%; Pred. No. 4.5e-312; Matches 1134; Conservative 0; Mismatches 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1140 TGAGCTGGACCTCAAGCTGCGCCAAGCTGA 1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2040 AAAGTTTCTTGCCTGGCTTACAGAAGCTGA 2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 27, Application US/09845416 Publication No. US20030171312A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Homo sapiens IS-09-845-416-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-09-845-416-27
                                                   780
                                                                                   1680
                                                                                                                     840
                                                                                                                                                                                   900
                                                                                                                                                                                                                   1800
                                                                                                                                                                                                                                                     096
                                                                                                                                                                                                                                                                                     1860
                                                                                                                                                                                                                                                                                                                       1020
                                                                                                                                                                                                                                                                                                                                                                                     1080
                                                                                                                                                                                                                                                                                                                                                                                                                       1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ᆏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1837
```

```
780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                     1080 ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                   2179 ACTTGAAAAGAGTACAGCACAGA 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68.1%;
illarity 99.9%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             / OTHER INFORMATION: Synthetic US-10-149-736-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 1102; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 11443
                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 9
US-10-149-736-44
                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                           d
                                                                                                                                                              g
                                                                                                                                                                                                                           . q
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                  ઠે
                                                                                                                                 à
                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                     \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1459 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 1818
                                                                                                                                                                                                                                                                                                                                                                                         1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         reaagramaccreeaccrrarcaaacaccrrragaagaagrarrarcereecrrcrrrc 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccadirircaracicardadddaracardarddaririgacadcccarcadddcdddddaraca 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAAAAGAAAAATGGAGGAAGA 539
                                                                                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGAGGACACATTGCAAGCACAAGGAGAGTTTCTAATGATGTGGAAGTGGTGAAAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGITICATACICATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361 AACTGAAGTACAAGAGCAGATGAATCTCCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACACAACATAAGGTGCTTCA 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGG 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 779
                                                                                                                                                                                                                                                                                                                                                                         GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCCAACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                         1 GAGCTATGCCTACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                      Length 8689;
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                      Score 1091; DB 15;
Pred. No. 1.1e-308;
0; Mismatches 0;
            CURRENT APPLICATION NUMBER: US/10/149,736
CURRENT FILING DATE: 2002-06-17
FINICA PELICATION NUMBER: PCT/US01/31126
PRIOR APPLICATION NUMBER: 60/238,848
PRIOR PILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Petentin version 3.1
SEQ ID NO 42
LENGTH: 8689
                                                                                                                                                                                     TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                                                                                                                                                      ) OTHER INFORMATION: Synthetic US-10-149-736-42
   FILE REFERENCE: UM-06968
                                                                                                                                                                                                                                                                                                                                                                                         1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1819
                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      쉱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1338
                                                                                                                                                                                                                                                                                                                    960 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4. Application US/10149736

Sequence 4. Application US/10149736

Publication No. US2030216332A1

GENERAL INPORMATION:
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Chamberlain, Jeffrey S.
TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences FILE REFERENCE: UN-06698

FILE REPERSNCE: UN-06698

CURRENT APPLICATION NUMBER: US/10/149,736

CURRENT FILING DATE: 2002-06-17

PRIOR PILING DATE: 2000-10-04

PRIOR PILING DATE: 2000-10-04

PRIOR PILING DATE: 2000-10-06

NUMBER OF SEQ ID NOS: 96

SOFTWARE: Patentin Version 3:1

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44

SEQ ID NO 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1219 rgaagraaaccrggaccgrrarcaacagcrrragaagaagrarrarcgrggcrrcrrc 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1159 TCCTTCACAGCATTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGGAGAGA
                                                                                                                            1939 AAAAGAAGATGCAGTGAACAAGATTCACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                       2059 GGGCAAACTGTATTCACTCAAACAAGATCTTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1099 daderrandecracaededegerderrandrededecereraededegedearr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 TGCTGAGGACACATTGCAAGGACACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1279 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                               1 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                   Length 11443;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1091; DB 15;
Pred. No. 1.3e-308;
0; Mismatches 0;
```

σ

1158

9

1218

120

1278

240

180

1338

300

1458

360

1398

1518

479

420

1578

539

1638

1698

599

1818

779

1758

629

719

1878

1938

⋩ હ ⋩ পূ ≿ ਚ ≿ ă

```
1939 AAAAGAAGAIGCAGIGAACAAGAITCACACAACIGGCIIIAAAAGAICAAAAIGAAAAIGTI
                                                                                                                                                                                                                                                                                                                                                                                    CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                           GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                         TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGAGGACACATTGCAAGCACACAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCCAAGATGGGAATGCCTCAGGGTAGC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGCATGGAAAAACAAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rgargaarcragagarcacgcaacrgcracrragaagaacaacrraaggrarragg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGCTGCGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                Length 12057;
                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                              Score 1091; DB 15;
Pred. No. 1.3e-308;
0; Mismatches 0;
NUMBER OF SEQ ID NOS: 96
SOFWARE: Patentin version 3.1
SEQ ID NO 47
EBNOTH: 12057
                                                                               TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                  Query Match
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                                                        ; OTHER INFORMATION: Synthetic US-10-149-736-47
                                                                                                                                                                                                                                                                                                                                                                                                 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1639
                                                                                                                                                                                                                                                                             Н
                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                   요
                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2118
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCGGAATCAGAAACT 1578
                                                                                                                                                                                                                                                                                                GAAAGAGTTGAATGACTGGCTAACAAAACAGAAGAAGAACAAGGAAAATGGAGGAAGA 1638
                                                                                                                                                                                                                                                                                                                                                               1639 GCCTCTTGGACCTGATCTTGAAGACCTTAAAACGCCAAGTACAACAACAACATAAGGTGCTTCA 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2119 CCAGAAGACGGAAGCCAFGGCTGGATAACTFFGCCCGGTGTFGGGATAATTFAGFCCAAAA 2178
                                                            1399 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1458
                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                   629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAGAAGATGCAGTGAACAAGATTCACACAGCTTGGCTTTAAAGATCAAAATGAAATGTT 899
                                                                                                                                                                               TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC 6AAACT 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JULIARY JOSTA, Application US/10149736
Sequence 47, Application US/10149736
Publication No. US20030216332A1
Sequence 47, Application Josephin No. US20030216332A1
APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Harper, Scott Q.
TILE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences FILE REFERENCE: UN-06968
CURRENT APPLICATION NUMBER: US/10/149,736
CURRENT PILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: 60/238,848
PRIOR FILING DATE: 2000-10-06
PRIOR FILING DATE: 2000-10-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTTCTCAAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                             GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGAATCTAGTGGAGATCACGCAACTGCTTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                      aactgaagtacaagagcagatgaatctcctaaattcaagatgggaatgcctcagggtagc
                                                                                                                                                                                                                                                                                                                                          GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2179 ACTTGAAAGAGTACAGCACAGA 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESULT 10
S-10-149-736-47
                                                                                                                                          1459
                                                                                                                                                                             421
                                                                                                                                                                                                                     1519
                                                                                                                                                                                                                                                                                                1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                         301
                                                                                                    361
                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  006
```

OY 421 TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479	Oy 480 GAAAGACTTGAATGACTGGCTAACAAAACAGAAAAGAAGAAGAAAATGGAAGAAA 539	Oy 540 GCCTCTTGGACCTGATCTTGAAGACCTAAAAGCCCAAGTACAACAACATAAGGTGCTTCA 599 1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698	OY 600 AGAAGATCTAGAACAAGAACAAGGTCAGGGTCAATTCTCTCACTCA	OY 660 IGANGARATCHAGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG 719	OY 720 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGGCTGGGTTCTTTTACAAGACAT 779	OY 780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGCCTTTCAGA 839	OY 840 AAAGAAGATGCAGTGAACAAGATTCACACACAACTGGCTTTAAAGATCAAAATGAAATGTT 899	QY 900 ALCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGCAATCCAT 959	OY 960 GGGCAAACTGTAITCACTCAAACAAGATCTTTCTATCAACACTGAAGAATAAGTCAGC 1019	QY 1020 CCAGAAGCAGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079 2119 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178	Qy 1080 ACTTGAAAGAGTACAGCACAGA 1102 	RESULT 12 US-09-880-107-2284 ; Sequence 2284, Application US/09880107	; Facent No. Usculzulargelal ; GENERAL INFORMATION: ; APPLICANT: Horne, Darci T. ; APPLICANT: Vockley, Joseph G.	; APPLICANT: Scheff, UWE ; APPLICANT: Gene Logic, Inc. ; TITLE OF INVENTION: Gene Expression Profiles in Liver Cancer ; FILE REPERBUCE: 44921-5028-WO	; CURRENT APPLICATION NUMBER; US/19/880,10/ ; CURRENT FILING DATE: 2001-06-14 ; PRIOR APPLICATION NUMBER: US 60/211,379 ; PRIOR FILING DATE: 2000-06-14	FAICH FILING DATE: 2000-10-02 NUMBER OF SEQ ID NOS: 3950 SOFTWARE: Patentin Ver. 2.1) SEQ 15 NO. 13957) TYPE: DNA. 17976: NO.
900 ATCAAGTCTTCAAAAACTGGCGGTTTTAAAAGCGGATCTAGAAAAGAAAAAAAGCAATCCAT 95	1999 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGGGGATCTAGAAAAGAAAAAGCAATCCAT 205 960 GGGCAAACTGTATTCACTCAAACAAGATCTTCAACAACAGCAGAATAAGTCAGTGAC 101	DD 2059 GGGCAAACIGIAIICACICAAACAAGAICTICITICAACAAGAAAAAAAA 2118 Qy 1020 CCAGAAAGAAGCAIGGCIGGATAACTIIGCCCGGIGIIGGGAIAATIIAGICCAAAA 1079 Dh 2119 CCAAAAAAAAAGAAGAAAGAAAGAAAAAAAAAAAAAAA	1080 ACTTGAAAGAGTACAGAA 1102	DD 2179 ACTIGAAAAGAACTACAGA 2201 RESULT 11	US-09-782-378A-22; Application US/09782378A; Sequence 22, Application US/09782378A; Patent No. US20020102731A1; GENERAL INFORMATION:	<pre>APPLICANT: Hearing, Patrick</pre>	TITLE OF INVENTION: Adenoviral Vectors FILE REFERENCE: STONYB-049: US/09/782,378A CURRENT APPLICATION NUMBER: US/09/782,378A CURRENT FILING DATE: 2001-02-12	; PRIOR APPLICATION NUMBER: 60/237,747 ; PRIOR FILING DATE: 2000-10-02 ; NUMBER OF SEQ ID NOS: 27 ; SOFTWARE: Patentin version 3.0	; SEQ 15 NO 22 ; IENCTH: 13957 ; TYPE: DNA ; ORGANISM: Homo sapiens	68.1%; Score 1091; DB 9; Length 1395 larity 99.9%; Pred. No. 1.5e-308; Conservative O. Wiemarhhee	ACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 60	QY 61 TCCTTCACAGCATTTGGAAGCTCCTGAAGACATCATTTGGCAGTTCATTGATGGAGAG 120 Db 1159 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAGAG 1218	OY 121 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTC 180 1219 TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTC 1278	Qy 181 TGCTGAGGACACATTGCAAGCACAAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 240 Db 1279 TGCTGAGGACACATTGCAAGCACAAGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1338	QY 241 CCAGITICALACTCALGAGGGBACATGATGACATGACAGCCCATCAGGGCCGGGTTGG 300 Db 1339 CCAGITICALACTCATGAGGGGBACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1398	QY 301 TARTATTCTACAATTGGGAAGTAAGCTGGTTGGAACAGGAAAATTATCAGAAGATGAAGA 360 	OY 361 AACTGAAGTACAAGAGAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420

```
2059 GGGCAAACTGTATTCACTCAACAACAAGATCTTTCAACACTGAAGAATAAGTCAGTGAC 2118
                                                                                                                                                                                                                                                                                                                              APPLICANT: Chamberlain, Jeffrey S.
APPLICANT: Harper, Scott Q.
TITLE OF INVENTION: Mini-Dystrophin Nucleic Acids and Peptide Sequences
FILE REFERENCE: UM-06568
FURRENT APPLICATION: NUMBER: US/10/149,736
CURRENT FILING DATE: 2002-06-17
PRIOR APPLICATION NUMBER: PCT/US01/31126
PRIOR PEPLICATION NUMBER: 60/238,848
PRIOR FILING DATE: 2000-10-06
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Patentin Version 3.1
SEQ ID NO 1
LENGTH: 13957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGTTTCATACTCATGAGGGGTACATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                       CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACAGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       recreaseacacarrecaaseacacaaseacararrecraarearerecaaseaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GAGCTATGCCTACACACACAGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rgaagraaaccrggaccgrrarcaacaccrrragaagaagrarrarcerggcrrcrrrc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGTTTCATACTCATGAGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAGAGTTGAATGACTGGCTAACAAAAACAGAAGAAGAACAAGGAAAAATGGAGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 13957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 68.1%; Score 1091; DB 15;
Best Local Similarity 99.9%; Pred. No. 1.5e-308;
Matches 1102; Conservative 0; Mismatches 0;
                                                                                                                           1080 ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                 2179 ACTTGAAAGAGTACAGCACAGA 2201
                                                                                                                                                                                                                              RESULT 13
US-10-149-736-1
; Sequence 1, Application US/10149736
; Publication No. US20030216332A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
CORGANISM: Homo sapiens
US-10-149-736-1
                                          1020
                                                                                   2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                   à
                                                                          g
                                                                                                                         à
                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                           TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 1218
                                                                                                                                                                                                                                                                                                                                                         reaagraaaccresaccerrarcaaacagcrrragaagaagrarrarceregcrrcrrrc 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGTTTCATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATCGATGGGCAAACATCTGTAGATGGACAGAAGAACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAAGAATCCAT 2058
                                                                                                                                                                                   1099 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                            1279 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1879 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTTAGTGCATGGCTTTCAGA 1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  599
                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          899
                                                                                                                                                                                                                                  TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                   TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGTITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAAATTATCAGAAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rgargaarcragragarcacgaacracracrrrragaagaacaacrraaggrarragg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGTGT
                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                       Gaps
                                                                                                       ;
T
OTHER INFORMATION: Genbank Accession No. US20020142981A1 M18533
                                                              Length 13957;
                                                                                                       0; Indels
                                                            Score 1091; DB 9;
Pred. No. 1.5e-308;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCT
                                                          Ouery Match
Best Local Similarity 99.9%;
Matches 1102; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                           1159
                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                           1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6661
                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              096
                                                                                                                                                                                        ਨ
                                                                                                                                                                                                                                  ≿
                                                                                                                                                                                                                                                                                                                                                           ਰ
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ≿
```

120

1218

180

1338

240

1398

1458

360

1518

420

1578

479

```
1271
                                                                                                                                                                121
                                                                                                                                                                                                1331
                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                              61
                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 원 첫
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                        g
                                                                                              ò
                                                                                                                          유
                                                                                                                                                            ò
                                                                                                                                                                                         원
                                                                                                                                                                                                                                  ਨੇ
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                1938
                                                                                                                                                                                                                                                                                                                                                                    1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA 2178
540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 599
1639 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA 1698
                                                                                                                                                                                                                     AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT 2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2118
                                                                                                                                                              rgargaarcragragaarcacccaacracracrrrragaagaacaacrraaggrarragg 1818
                                                                                                                                                                                                                                                                                                                                    899
                                                                                                                                719
                                                                                                                                                                                                                                                                   839
                                                                 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US=10-344-801/434387

Publication No. US20040058340A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Linsley, Peter S.
APPLICANT: Linsley, Peter S.
APPLICANT: Linsley, Peter S.
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: Van 't Veer, Laura Johanna
APPLICANT: APPLICATION NUMBER: US/10/342,887
CURRENT FILING DATE: 2003-01-15
PRIOR APLICATION NUMBER: 10/12,118
PRIOR PILING DATE: 2003-06-18
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
PRIOR PILING DATE: 2003-06-14
                                                                                         TGATGAATCTAGTGGAGATCACGCAACTGCTGCTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                   CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                cerrereaarescaacererracisaasaacasiseeririrrasisearescaresa
                                                                                                                                                                                                                                                                                                                                    AAAAGAAGATGCAGTGAACAAGATTCACACACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                  AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAAGAAAAAGCAATCCAT
                                                                 AGAAGATCTAGAACAAGAACAAGTCAGGGTCAATTCTCTCACATGGTGGTGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 14069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               68.1%; Score 1091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTIGAAAAGAGTACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: DNA
; ORGANISM: Homc
US-10-342-887-434
                                                                                                 1699
                                                                                                                                                                  1759
                                                                                                                                                                                                                                  1819
                                                                                                                                                                                                                                                                                                   1879
                                                                                                                                                                                                                                                                                                                                                                     1939
                                                                                                                                                                                                                                                                                                                                                                                                                                     1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2179
                                                                   009
                                                                                                                                 9
                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                              원
                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    d
   ò
                              9
                                                                ò
                                                                                         임
                                                                                                                                \dot{\delta}
                                                                                                                                                         g
                                                                                                                                                                                       8
```

```
2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1079
                                                                                                            1270
                                                                                                                                                                                                    1330
                                                                                                                                                                                                                                                                                                 1390
                                                                                                                                                                                                                                                                                                                                                                                          1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2171 GGGCAAACTGTATTCACTCAAACAAGATCTTTCTTTCAACACTGAAGAATAAGTCAGTGAC 2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      899
                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1751 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACAACATGGGTGCTTCA
                                                                                               1211 GAGCTATGCCTACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1631 TAGCATGGAAAAACAAAGGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660 TGATGAATCTAGTGGAGATCACGCAACTGCTGTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1931 AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACGGCTGGGGTTCTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1991 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      840 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2111 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         960 GGGCAAACTGTATTCACTCAAACAAGATCTTTCTATCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                   TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACATAAGGTGCTTCA
                                                                                                                                                             TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCATGGAAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCCAGAATC-GAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720 AGAICGAIGGGCAAACAICIGIAGAIGGACAGAAGACCGCIGGGIICTITIACAAGACAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780 CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                                                          1391 recreaceacatrecaaceacaacaacaacaacaarricraarcarcrecaacrecreaaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA
                                                                    1 GAGCTATGCCTACACACACGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                     TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC
                                                                                                                                                                                                                                                                                                                                                TGCTGAGGACACATTGCAAGCACAAGGAGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGITICATACICATGAGGGIACATGATGGATTTGACAGCCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                      Gaps
                      Indela
  Pred. No. 1.5e-308;
0; Mismatches 0;
ilarity 99.9%;
Conservative
  Best Local Similarity
Matches 1102; Conser
```

1943

779

2063

2183

용 ጵ ď

```
1704 GAAAGAGTIGGAATGACTGGCTAACAAAAAAAGAAAGAAAGAAAGAAAATGGAAGAAGAA 1763
                                                                                                                                                                                                                                                                                                                                        1884 TGATGAATCTAGTGGAGATCACGCAACTGCTGTTTGGAAGAACAACTTAAGGTATTGGG
                                                                                                                                                                                                                                    AGATCGATGGGCAAACATCTGTAGATGGACAGAAGACCGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2124 ATCAAGTCTTCAAAAACTGGCCGTTTTAAAAGCGGATCTAGAAAAGAAAAAGCAATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGCAAACTGTATTCACTCAAACAAGATCTTCTTTCAACACTGAAGAATAAGTCAGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2244 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTTGGGATAATTTAGTCCAAAA
     540 GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                          GCCTCTTGGACCTGATCTTGAAGACCTAAAACGCCAAGTACAACAACATAAGGTGCTTCA
                                                                                                                                                                                             AGATCGATGGCCAAACATCTGTAGATGGACAGAAGACGCTGGGTTCTTTTACAAGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTCTCAAATGGCAACGTCTTACTGAAGAACAGTGCCTTTTTAGTGCATGGCTTTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cerrereaareseaacererracisaacaacasiseerrrrragiseareserreasa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2064 AAAAGAAGATGCAGTGAACAAGATTCACACAACTGGCTTTAAAGATCAAAATGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCCGGTGTTGGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2304 ACTTGAAAGAGTACAGCACAGA 2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTIGAAAAGAGIACAGCACAGA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5, 2004, 16:34:31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search completed: April
Job time : 393.214 secs
                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                        720 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                             1764
                                                                                                                                                                                                                                                                                                                                                                                                                                       1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1020
                                                                                                                                                                                                                                                                                          099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               960
                                                                                       ò
                                                                                                                             ନ୍ଧ ଧ
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                          8 8
                                                                                                                                                                                                                                                                                                                                                                       $ B $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1224 GAGCTATGCCTACACAGAGCTGCTTATGTCACCACCTCTGACCCTACACAGAGCCCATT 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1284 TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGATGAG 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1644 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATCAGAACT 1703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1344 rgaagraaaccrggaccgrrarcaaacagcrrragaagaagrarrarcgregcrrcrrrc 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1404 TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAAA 1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1524 TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1584 AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC 1643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTTCACAGCATTTGGAAGCTCCTGAAGACAAGTCATTTGGCAGTTCATTGATGGAGAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAATATTCTACAATTGGGAAGTAAGCTGATTGGAACAGGAAAATTATCAGAAGATGAAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAAGTAAACCTGGACCGTTATCAAACAGCTTTAGAAGAAGTATTATCGTGGCTTCTTTC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421 TAGCATGGAAAACAAAGCAATTTACATAGAGTTTTAATGGATCTCCAGAATC-GAAACT 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                Sequence 981, Application US/10342887

Sequence 981, Application US/10342887

Publication No. US20040058340A1

GENERAL INFORMATION:

APPLICANT: Dai, Hongyue

APPLICANT: Dai, Hongyue

APPLICANT: Bai, Hongyue

APPLICANT: Roberts, Christopher J.

APPLICANT: Roberts, Christopher J.

APPLICANT: Wan 't Veer, Laura Johanna

APPLICANT: Van de Vijver, Marc J.

APPLICANT: Van de Vijver, Marc J.

APPLICANT: Van de Vijver, Marc J.

APPLICANT: Van de Vijver, Marc J.

APPLICANT: Van de Vijver, Marc J.

APPLICANT: Sernards, Rene

TITLE OF INVENTION: Diagnosis and Prognosis of Breast Cancer Patients

FILE REPERENCE: 9301-188-999

CURRENT FILING DATE: 2003-01-15

PRIOR FILING DATE: 2003-01-16

PRIOR FILING DATE: 2003-06-14

PRIOR FILING DATE: 2002-06-14

PRIOR FILING DATE: 2002-06-14

PRIOR FILING DATE: 2002-06-14

PRIOR FILING DATE: 2002-06-14

PRIOR FILING DATE: 2002-06-14

NUMBER OF SEQ ID NOS: 2699

LENGTH: AND OS BED IN ONS: 2699
2231 CCAGAAGACGGAAGCATGGCTGGATAACTTTGCCCGGTGTTGGGATAATTTAGTCCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGITICATACTCATGAGGGGTACATGATGGATTTGACAGCCCATCAGGGCCGGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGAGGACACATTGCAAGCACAAGGAGATTTCTAATGATGTGGAAGTGGTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTGAAGTACAAGAGCAGATGAATCTCCTAAATTCAAGATGGGAATGCCTCAGGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GAGCTATGCCTACACACACAGGCTGCTTATGTCACCACCTCTGACCCTACACGGAGCCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 14082;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 99.9%; Pred. No. 1.5e-308;
Matches 1102; Conservative 0; Mismatches 0;
                                              1080 ACTTGAAAGAGTACAGCACAGA 1102
                                                                                            2291 ACTIGAAAAGAGIACAGACACAGA 2313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Homo sapiens IS-10-342-887-981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
```

≿

Sequence 1, App Sequence 44, Ap Sequence 47, Ap Sequence 22, App Sequence 2284, App Sequence 1, App

Sequence

Seguence 434,

Sequence Sequence Sequence Sequence

Seguence

Sequence 15, Appl Sequence 4, Appli Sequence 23, Appli Sequence 15, Appli Sequence 157, App

Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence

Sequence Sequence

```
103 CGACTITCCAGCAGIICAGAAGCAGAACGAIGIACAIAGGGCCIICAAGAGGGAAIIGAA 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 120.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         233 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGIACAIAGGGGCCTICAAGAGGGAAITGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              163 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
TITLE OF INVENTION: THEREOF
FILE REPERENCE: DE1142
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 13
LENGTH: 1821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10; Length 1821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                            US-10-149-736-17

US-10-149-736-17

US-10-342-887-434 .

US-10-341-434-108

US-10-341-434-108

US-09-845-416-32

US-09-845-416-32

US-09-845-416-32

US-10-149-736-4

US-10-149-736-4

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35

US-10-149-736-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 1301;
100.0%; Pred. No. 0;
iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 13, Application US/09845416 Publication No. US20030171312A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                               13957
14069
14082
14082
13815
3446
                                                                                                                                                                                                                                            11096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Homo sapiens
US-09-845-416-13
                                                                     US-09-845-416-13
                                                                                                                                                                     1135.2
1017.6
1017.6
1016.6
1016
567.2
553.8
1301
1301
1301
1301
1301
1301
1301
 원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                              April 5, 2004, 04:53:30 ; Search time 315.469 Seconds (without alignments) 15454.047 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 10,
Sequence 9, A
Sequence 6, A
Sequence 2, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 13,
                                                                                                                                                                                      1 cgactttccagcagttcaga......ccggagctgcttccaatttg 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US07_NSW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US07_NSW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US06_NSW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US07_NSW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/NS08_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_NSW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US10A_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10B_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seg:*
               GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-845-416-13
US-09-845-416-4
US-09-845-416-10
US-09-845-416-9
US-09-845-416-9
US-09-845-416-2
US-09-845-416-2
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
US-09-845-416-3
                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                           2470430 segs, 1873665578 residues
                                                                                                                                                       US-09-845-416-10_COPY_1800_3100
1301
                                                                                                                                                                                                                                                                                                                                                                                                                       Published Applications NA:*
                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                  IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    litle:
Perfect score:
                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                    Winimum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seguence:
                                                                                                                                                                                                                                                             searched:
                                                                                                                                                                                                                                                                                                                                                                                                                       Jatabase
                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tesult
```

0; Gaps

ò d à Б ò g 셤 ò 임 ò

ઠે

g ò d ò 엄

셤 ò 유

ò 셤

ò

ò 吕 쉽

ð d ò

ò

dd

셤 δ g 8

ઠે

```
1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8.70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                             Selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the selection of the select
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rcregaagaccrgaacaccagaregaagcrrcrecaegregecerceaegacceaercae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451 CGACTITCCAGCAGITCAGAAGCAGAACGAIGTACAIAGGGCCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        511 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ageceagaargreacresserreracsaaaseassersassassereararacreasses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CGACTITICCAGCAGTICAGAAGCAGAACGAIGTACATAGGGCCTICAAGAGGGAATIGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
1363 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 1301;
100.0%; Pred. No. 0;
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.
Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Homo sapiens
                                                                       RESULT 2
US-09-845-416-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-845-416-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199
    ይ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \overset{\circ}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1362
                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          840
                           342
                                                                       300
                                                                                                                   402
                                                                                                                                                                                                         462
                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                     522
                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                643 TCTGGAAGACCTGAACACCAGATGGATCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                   TATITIATIGACCGCCTGGAGGCAAGACACATITIGGTCAACGTCCCTCTCTGCGTGGA
                                                                       AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACT
                                                                                                  AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                     caacegarccreccacceredecearcrecrearreacrerecaagarcaceresa
                                                                                                                                                                                                                                                                                                                                                   GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            583 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                763 rericcaedercicregeagagacicarcregecaacaagagagaccratararcaacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             823 cgagacrcaaacarcrigcrggaccarccaaaargacagagcrcraccagrcrrragc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    883 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            943 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGTGTCTGAACTGGTGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         congrottrinaaaacrescarcarrincecrereraaagcacarringsaagacaagacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1243 ATACCTTTTCAAGCAAGTGGGAAGTTCAACAGGATTTTGTGACCAGGGCAGGCTGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                         ccassaacricaasasseccacssarsascrissaccricaascriscsccaascrisassrar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATTTATGACCGCCTGGAGCAAGAGCACAACTTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1063
                                                                       241
                                                                                                                   343
                                                                                                                                                             301
                                                                                                                                                                                                         403
                                                                                                                                                                                                                                                                                                     463
                                                                                                                                                                                                                                                                                                                                                                                                523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1261
                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         961
```

ö

61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 120 1839 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACGAATATTTCTGACAGAGCA 1898 121 GCCTTTGGAAGACTTGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGG 1898 181 AGCCCAGAATGTCACTGGCTTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGG 1958 181 AGCCCAGAATGTCACTGGCTTCTACCAGAGCCCAGAGAGCTGCTCCTCTGAGGAGG 1958 181 AGCCCAGAATGTCACTGGCTTCTACCAGAGCCCAGAGAGCTGCTCCTCTGAGGAGG 1958 181 AGCCCAGAATGTCACTGGCTTCTACGAAACTGAGAGCTGAGAGGTCAATACTCAGTGGGA 2018 1959 AGCCCAGAATGTCACTGGCTTCTACGAAACTGAGAGCTGAAGACTT 300 2019 AAAATTGAACCTGCACTCGGCTTCTACGAAAAAAAAAAA	721 CGAGACTCAAACAACTTGCTGGAACATCCCAAATGACAGAGTCTACCAGTCTTTAGC
8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6 8 6	5 B 5 B 5 B 5 B 5 B 5 B 5
	·
1111 TGTCCAGGGTCCCTGGGAAGACCATCCGCAAACAAGAGCCCTACTATATCACACA 1170 CGGAACTCAAACAACAACAACAACAACAACAACAACAACAACA	SESCULT 3 35-09-845-416-12 5-equence 12. Application US/09845416 5-bublication No. US20030171312A1 GENERAL INFORMATION: 7-bublication No. US20030171312A1 GENERAL INFORMATION: 7-bublication No. US20030171312A1 GENERAL INFORMATION: 7-bublication Number 12.01-04-30 FILING DATE: 2001-04-30 FRICH FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 5-SOTWARE: Patentin Ver. 2.1 5-SEQ ID NO 12 5-SEQ ID N

Oy 541 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCGTCGAGGACCGAGTGG 600 Db 2340 TCTGGAAGACCTGAACACAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACGACGACGACGAGGTCAG	QY 601 GCACGATGAAGCCCACAGGGACTTTGGTCCAGCATTTCTTTC	Oy 661 TGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA 720	OY 721 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGGGCTCTACCAGTCTTTAGC 780	Oy 781 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840	OY 841 GAAGGCCCTTTGGATCTTGTAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 900 2640 GAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCTTTGACCAGCA 2699	Qy 901 CAACCTCAAGCAAAATGACCAGGCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960	QY 961 TATTTATGACCGCCTGGAGCGAGGGCACAACAATTTGGTCAAGGTCCCTCTGCGTGGA 1020 Db 2760 TATTTATGACCGCCTGGAGCACAAGAGCACAATTTGGTCAAGGTCCCTCTGCGTGGA 2819	Qy 1021 TATGTGTCTGAACTGGCTGGTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 1080 2820 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGAGGATCCGTGT 2879	Oy 1081 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAACCACATTTGGAAGACAAGTACAG 1140 2880 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 2939	Oy 1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGATTTTGTGACCAGCGCAGGCTGGGCCT 1200	Qy 1201 CCTTCTGCATGATTCTATCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260	OY 1261 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301	RESULT 5 US-09-845-416-9 ; Sequence 9, Application US/09845416 ; Builiarion No HSO03017131281	GENERAL INFORMATION: GENERAL INFORMATION: THILD OF INFORMATION: THILD OF INFORMATION: THILD OF INFORMATION: THILD OF INFORMATION: THILD OF INFORMATION: THILD OF INFORMATION: THIRD OF INFORMATION: TH	; FILE REFERENCE: DE1142 ; CURRENT APPLICATION NUMBER: US/09/845,416 ; CURRENT FILING DATE: 2001-04-30 ; PRICR APPLICATION NUMBER: 60/200,777	; PRICR FILING DATE: 2000-04-28 ; NUMBER OF SEQ ID NOS: 36 ; SOFTWARE: Patentin Ver. 2.1 ; SFO ID NO 9	; LENGTH: 3858 ; TYPE: DNA ; ORGANISM: Homo sapiens US-09-845-416-9
2919 ATACCITITCAAGCAAGTGGGAAGTTCAACAGGATTTTGTGACCAGGCAGG	OY 1201 CCTTCTGCARGATTCTATCCAACACTTGGGTGAACTTGCATCCTTGGGGG 1260	OY 1261 CAGTAACATIGAGCCAAGTGTCCGGAGCTGCTTCCAATTG 1301	RESULT 4 US-09-845-416-10 , Sequence 10, Application US/09845416	Publication No. US20030171312A1 Publication No. US20030171312A1 APPLICANT: NAO, YARO, TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	TITLE OF INVENTION: THEREOF FILE REPERENCE: DEL142 CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30	PRIOR APPLICATION NUMBER: 60/200,777 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: PATENTIN Ver. 2.1		-10 100.0%; Score 1301; DB 10; Length 3531; Similarity 100.0%; Pred. No. 0;	vative 0; Mismatches 0; Indels 0; Gaps AGCAGTICAGAAGGAAGGATGAACATAGGGCCTTCAAGAGGGAATTGAA	1800 GGACTTTCCAGGAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA 1 61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 1		AGTGGGA HIIIII	OY 241 AAAATTGAACCTGCACTGACTGGCAGAGAAAAATAGATGAGCCCTTGAAGACT 300 	Oy 301 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACTTCAAGCTGGCCCAAGCTGAGTGAT 360	OY 361 CAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACTCGA 420	OY 421 GAAAGTCAAGGCACTTCGAGGAAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAA 480	QY 481 TGACCTTGCCGCGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 540

Oy 1021 TATGIGTCTGAACTGGTGAATGTTTATGATACGGAACAGGAACAGGAACCGTGT 1080 3147 TATGIGTCTTGAACTGGTGTGAATGTTTATGATACGGAACAGGAACAGGAACAGGAACCGTGT 3206 Qy 1081 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAGTACAG 1140 Db 3207 CCTGTCTTTTAAAACTGGCATCATTTCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 3266 Qy 1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGCCT 1200 Db 3267 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGCCT 3326 Qy 1201 CCTTGTGCATGATTCTATCCAAGACTTGGGAAGTTGCATCCTTTGGGGG 1386 Qy 1201 CCTTGTGCATGATTCTATCCAAGACTTGGGTGAAGTTGCATCCTTTGGGGG 3386 Qy 1261 CATAGACATTCTATCCAAGACTGTTGGGTGAAGTTGCATCCTTTGGGGG 3386 Qy 1261 CAGTAACATTCTATCCAAGACTGTTGGTTGAAGTTGCATCCTTTGGGGG 3386 Qy 1261 CAGTAACATTCTATCCAAGACTGTTGGTTGAAGTTGCATCCTTTGGGGG 3386 Qy 1261 CAGTAACATTCTATCCAAGACTGTTGGTTGAAGTTGCATCCTTTTGGGGG 3386 Qy 1261 CAGTAACATTCTATCCAAGACTGTTTGTTGGTTGAAGTTGCATCCTTTTGGGGG 3386 Qy 1261 CAGTAACATTGAGCCAAGTGTCCCAAGTTGGTTGGTTGAAGTTGCATCCTTTTGGGGG 3386 Db 3387 CAGTAACATTGAGCCAAGTGTCCCAAGTTTGGTTGGTTGAAGTTGTTTTGTTGTTTTTTTT	RESULT 6 US-09-845-416-6 Sequence 6, Application US/09845416 Sequence 6, Application US/09845416 Publication No. US2030171312A1 GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: TITLE OF INVENTION: THEREOF FILE REFERENCE: DELACY CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30 PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOOTWARE: PATCHEIN VOT: 2.1 SEQ ID NO 6 LENGTH: 3999 TYPE: DNA TYPE: DNA TYPE: DNA TYPE: DNA	arity Onser TITCC	Db 2388 GCCTTTGGAAAACTCTACAAAACCTACAGAGCTGCCTCCTGAGGAGC 2447 Oy 181 AACCCAGAATGTCACTGGCTTCTACGAAAGCTGGCTGAGGAGCTGCTCCTGAGGAGG 2407 Db 2448 AGCCCAGAATGTCACTGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGA 2507 Oy 241 AAAATTGAACTGCACTCGGCTGCTGGCAGAAAAATAGATGAGCCTTGAAAGCT 300 Db 2508 AAAATTGAACTGCACTGGCTGCTGGCAGAAAAATAGATGAGCCTTGAAAGACT 2567 Oy 301 CCAGGAACTTCAAGAGGCCAGGAGAAAAATAGATGAGCCCTTGAAAGACT 2567 Db 2568 CCAGGAACTTCAAGAGGCCAGGATGAAAAATAGATGAGCCCTTGAAAGACT 2567 Oy 301 CCAGGAACTTCAAGAGGCCAGGATGAGACTCAAGCTGCGCCAAGCTGAGAGTGAT 360 Db 2568 CCAGGAACTTCAAGAGGCCAGGATGAGCTCCAAGCTCCAAGCTGAGATGACTGAGATGACTGAGATGATGATGATGATGATGATGATGATGATGAGTGAT 2627 Db 268 CCAGGAACTCCAGCAGGAGCCCGTGGAGCTCCAAGCTCCCAAGCTCAAGATGATGATGATGATGATGATGATGATGATGATGATGA
Query Match 100.0%; Score 1301; DB 10; Length 3858; Best Local Similarity 100.0%; Pred. No. 0; 0; Indels 0; Gaps 0; Matches 1301; Conservative 0; Mismatches 0; Indels 0; Gaps 0; V I CGACTTTCCAGCAGTTCAGAAGCAGAACGATGACATAGGGCCTTCAAGAGGGAATTGAA 0; CGACTTTCCAGCAGTTCAGAAGCAGAACGATGACATAGAGACCTTCAAGAGGGAATTGAA 2186 b 2127 CGACTTTCCAGCAGTACATGAGTACTCTTGAGACTGTACGAATATTCTGACAGAGCA 120 y 61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTCTGACAGAGGA 2246 b 2187 AACTAGAAGACTAGAGAAACTCTACCAGAGACCCAGAGAGCACCTCTGAGAGAG 180 y 121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGACCCAGAGAGCCCTCTGAGAGAG 2306 b 2247 GCCTTTGGAAAGACTAGAGAAACTCTACCAGAGACCCAGAGAGCTCAATACTGAGAGAG 2306 y 181 HIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		541 TCTGGAAGACTGACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTGACCGTTCACCACGTTCACCACCACCACCACACCACCACACCACACACA	CAGATTCTCAGACTATAGGACTGCATGAAACTCTACAGACTGTATAGC CAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA CAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA CAGATCTCTTAGACCTGCAGCTGCATGAAACTCCGAAGACTGCA GGATCTCTTGAGCCTGTCAGCTGCATGTGAAACTCCGAAGACTGCA GGATCTCTTGAGCCTGTCAGCTGCATGTGAAACTCCAGCA CGAACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC CTGACCAGCCCATGGATATCCTCACAGATTATTAATTGTTTGACCAC CGAGCCAAGACAACAATTTGGTCAAGTCCTCTCTCGGTGGA CGAGCAAGAAGACAAAATTTGGTCAACGTCCCTCTCTCGGTGGA CGAGCAAGAAGAAATTTGGTCAACGTCCCTCTCTCGGTGGA CGAGCAAGAAGAATTTGGTCAACGTCCCTCTCTCGGTGGA

ø

```
2571 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGGTGCTCCTGAGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              reaccirectececactraceactriesecarreactereaceactraacereaseac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2511 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rerccasesrccrressasasascarcrescaaacaaasaasccracracrararcaacca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                 2451 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                            CGACTTTCCAGCAGTTCAGAAGCAGCAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                  AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                 Length 4182;
                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                               100.0%; Score 1301;
100.0%; Pred. No. 0;
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR FILING DATE: 2000-04-28
NUMBER OF SEQ ID NOS: 36
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 2
LENGTH: 4182
                                                                                                                                                                                                                                 Query Match
Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                    TYPE: DNA
CORGANISM: Homo sapiens
US-09-845-416-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3171
                                                                                                                                                                                                                                                                                                                            Н
                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                  8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 6 8 6 8 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 & 8 &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                  2927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1200
                                                                    2747
                                                                                                                                                                                                                                                                                                                                                                                                                                        2987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTCTGCATGATTCTATCCAAAATTCCAAGACAGTTGGGGTGAAGTTGCATCCTTTGGGGG 3527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 3167
                                                                                                                   540
                                                                                                                                                                                                                                                                                                    999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                               480
                                                                                                                                                                                                           600
                                                                    2688 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGTGAGCCACGTCAA
                                                                                                                   TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                2748 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                         1928 TGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAACAACAAGAGTGCCCTACTATATCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ceacactcaaacaactrocreesaccarccaaaareacascreraccacrerres
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3048 IGACCIGAATAATGICAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGGCCCTTTGCTTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAACCTCAAGCAAAATGACCAGCCCATGGATATCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATITIATGACCCCCCCGCAGCACAACAATTTGGTCAACGTCCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATIGTICTICALACTICCTICALATICTTTATICATACCCCAACCACCAACACACCACCATCCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGICITITIES OF THE CONTRACT TATGATA CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT OF THE CONTRACT 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COTGICITITAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                           TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/09845416
Publication No. US20030171312A1
GENERAL INFORMATION:
APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
TITLE OF INVENTION: THEREOF
FILE REPERENCE: DEILA
CURRENT APPLICATION NUMBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGTAACATTGAGCCCAAGTGTCCGGAGCTGCTTCCAATTTG 3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-845-416-2
                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261
                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1201
                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                               g
                                                                                                                   8 6
                                                                                                                                                                                            à
                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                 $ B
                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                               ò
```

2630

240

2570 120

ö

09

2750

300

2810

420

480

360

2990

540

3050

909

3110

99

3230

GAAGGCCCTTTGCTTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGTCATGTCATGGACCTTGGACCAGCA

GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA

3231

셤 ò

841

3291

Db 2775 AAAATTGAACCTCCACTCGACTGACTGACAGAGAAAATAGATGACACCCTTGAAAGACT 2834 Qy 301 CCAGGAACTTCAAGAGCCACGATGACTGGACTCCAAGCTGACTGA	361 CAAGGATCCTGGCAGCCGTGGCGATCTCCTCCTCCTCCCAAGATCACCTCGA 4 2895 CAAGGATCCTGCCGTGGCGGGGCGATCTCCTCCTTCATTACTCTCCCAAGATCACCTCGA 4	421 GANAGICAAGGCACITCCAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 	481 TGACCTTGCTCGCCAGCTTACCACTTTGGCCATTCAGCTCTCACCGTATAACCTCAGCAG	541 TCTGGAAGACCTGAACGAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG 3075 TCTGGAAGACCTGAACCCAGATGAAAGCTTCTGCAGGTCGCCGTCGAGGACCGAGAACCCAGAGAAGCTTCTGCAGGACGCTCGAAGGACCGACGAGAACCTGAAAGCTTCTGCAGGACCGACGAGGACCGACGACGACGACGACGACGACG	601	QY 661 TGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCTACTATATCAACCA 720	OY 721 CGAGACTCAAACAACTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 780	OY 781 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840	Oy 841 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGATGTGATGCCTTGGACCAGCA 900	OY 901 CAACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960 1435 CAACCTCAAGCAAAATGACCAGCCCATGGATATCTGCAGATTATTAATTGTTTGACCAC 3494	OY 961 TATTTATGACCGCCTGGAGCAAGAACAACAATTGGTCAACGTCCCTCTCTGCGTGGA 1020	OY 1021 TATGTGTCTGAACTGGTGGTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 1080	Qy 1081 CCTGTCTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 1140 Db 3615 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 3674	OY 1141 ATACCTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCCT 1200	CCTTCTGCATGATTCTATCCAATTCCAAGACAGTTGGGTGA	<pre>Qy 1261 CACTAACHTGAGCCAAGTGTCCGGAGCTGCTTCCATTTG 1301 </pre>	RESULT 9 US-09-845-416-30
2y 901 CAACCICAAGCAAAATGACCAGGCCAIGGATAICCIGCAGATTAITAATIGTTIGACCAC 960 	3y 961 TATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCTCTCTGCGTGGA 1020 3411 TATTTATGACCGCCTGGAGCAAGAGCACAACTATTGGTCAACGTCCCTCTGCGTGGA 3470	2y 1021 TATGTGTCTGAACTGCTGCTGAATGTTATGATACGGGACGAACAGGGAGGATCCGTGT 1080 3471 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 3530	2y 1081 CCTGTCTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 1140 3531 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 3590	2y 1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCAGG	CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTG;	y 1261 CAGTAACATTGAGCCAAGTGCCGAAGCTGCTTCCAATTG 1301 	ESULT 8 S-09-845-416-31 Sequence 31, Application US/09845416	PUDICATION NO. US20030171312A1 GENERAL INFORMATION: APPLICANT: XIAO, XIAO TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE	FILE OF INTENTION: INDICOS FILE REFERENCE: DE1142 CURRENT APPLICATION NUMBER: US/09/845,416 CURRENT FILING DATE: 2001-04-30	PALOR AFFILATION NUMBER: 00/200,/// PRIOR FILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1	SEQ ID NO 31 LENGTH: 4476 TYPE: DNA ORGANISM: Homo sapiens	2 2 8 8	ACCAGITCAGAACCAGAACGAIGTACAIAGGGCCTICAACAGGGAAITGAA 60	61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGCA 1	ACCITITICAAAGGACIAAAAAAAAAAAAAAAAAAAAAAA	181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGTGAGAGGTCAATACTGAGTGGGA 	y 241 aaaattgaacctgcactgccagagagaaaaatagaggagccttgaaagact 300

α

```
1944 AACTAAAGAACCIGTAATCAIGAGTACICIIGAGAGIGIACGAAIAITTCIGACAGAGCA 3003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3277 CGAGACTCAAACAACTIGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 29, Application US/09845416

Sequence 29, Application US/09845416

Publication No. US20030171312A1

GENERAL INFORMATION:

APPLICANT: XIAO. XIAO

TITLE OF INVENTION: THEREOF

FILE REFERENCE: DE1142

CURRENT APPLICATION NUMBER: US/09/845,416

CURRENT APPLICATION NUMBER: 00/200,777

PRIOR PILING DATE: 2001-04-20

NUMBER OF SEQ ID NOS: 36

SOFTWARE: Patentin Ver. 2.1

LENGTH: 4825
                                                                                                                                                                                                                                                          3457 CAACCTCAAGCAAAATGACCAGGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2884 CGACTTTCCAGCAGTTCAGAACCAGAACGATGTACATAGGGGCCTTCAGAGGGAATTGAA
                                                                                     3337 reaccidaaraarercagaricicaeciraraesacieccareaaaciceaaacieca
                                                                                                                                    841 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                              CAACCICAAGCAAAATGACCAGCCCATGGATAICCTGCAGATTAITAATTGATTGACCAC
                                                                                                                                                                                                                                                                                                                                                      3517 ratritargacceccregaecaagaecaacaacaacaarritegreaacerecerereceres
                                                                                                                                                                                                                                                                                                                                                                                                 1021 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                           1081 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3837 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3697 Ataccititicaagcaagtggcaagticaacaggarririgigaccagcgcaggcrggccr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CGACTITICCAGCAGTICAGAAGCAGAACGAIGTACATAGGGCCTICAAGAGGGGAATIGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                              TATTTATGACCCCTGGAGCAAGAGCACAAATTTGGTCAACGTCCCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3817 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 3857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 1301; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 100.0
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-845-416-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-845-416-29
                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                              용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                  g
                                                                                                                                                                                                                    ठे
                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                   ઇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 2916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 2736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2797 AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAAATAGATGAGACCCTTGAAAGACT 2856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGACGTGAGCCACGTCAA 3036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           reacctrocreeceaerraceaerrressearresserereaeceraraaceresses 3096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rerccaederccreegagagaccarcreeccaacaagagacccracrararcaacca 3276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2557 cdactriccadcadricadaagcadaacgargracaradgdgccricaadagdgdaarigaa 2616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2617 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 2676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGGGGGCTCAATACTGAGTGGGA 2796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGGGATCCTGGCAGCCCGTGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA 2976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rcregaagaccreaacaccagargaaacrrcrecagregecerceregagaccaacraa 3156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGGGATCCTGGCAGCCCGTGGCCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGGAACTICAAGAGGCCACGGAIGAGCIGGACCICCAAGCIGCGCCAAGCIGAGGIGAI 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CGACTITCCAGCAGTICAGAAGCAGAACGAIGIACATAGGGCCTICAAGAGGGAATIGAA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: XIAO, XIAO
TITLE OF INVENTION: DIA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
TITLE OF INVENTION: THEREOF
FILE REFERENCE: DE1142
CURRENT APPLICATION WINBER: US/09/845,416
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: 60/200,777
PRIOR APPLICATION NUMBER: 60/200,777
NUMBER OF SEQ ID NOS: 36
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
100.0%; Score 1301; DB 10; Length 4498;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches 0; Indels 0;
    Sequence 30, Application US/09845416 Publication No. US20030171312A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
CORGANISM: Homo sapiens
US-09-845-416-30
                                                                                                                                                                                                                                                                                                                     4498
                                                                                                                                                                                                                                                                                           SEQ ID NO 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

Db 4084 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 4143 Qy	RESULT 11 US-09-845-416-35 ; Sequence 35, Application US/09845416 ; Publication No. US20030171312A1 ; GENERAL INFORMATION: ; APPLICANT: XTAO, XTAO ; TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE ; FILE REFERENCE: DE1142 ; CURRENT APPLICATION NUMBER: US/09/845,416 ; CURRENT FILING DATE: 2001-04-30	; PRIOR APPLICATION NUMBER: 60/200,777 ; PRIOR FILING DATE: 2000-04-28 ; NUMBER OF SEQ ID NOS: 36 ; SOFTWARE: Patentin Ver. 2.1 ; SEQ ID NO 35 ; LENGTH: 4848 ; TYPE: DNA ; ORGANISM: Homo sapiens US-09-845-416-35	Ouery Match Best Local Similarity 100.0%; Score 1301; DB 10; Length 4848; Best Local Similarity 100.0%; Pred. No. 0; Matches 1301; Conservative 0; Mismatches 0; Indels 0; Gaps 0; Oy 1 CGACTTCCAGCAGTTCAGAAGGAAGGAAGGAGGAATTGAA 60	61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTCTGAGAGCA 61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 62 67 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 121 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGCA 122 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGCAGAGAGAG	181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGCCGAGAGGCGCTCTGGAGGAGG 181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 3087 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 241 AAAATTGAACCTGCACTGGCAGGCAGAAAAAAAAAAGAGCCCTTGAAAGACT	3147 AAAATTGAACCTGCACTGACTGGCAGAAAAAATAGATGAGCACCTTGAAAGACT 320 301 CCAGGAACTTCAAGAGGCCACGGATGAGCTGAACCTCAAGCTGCCCAAGCTGAGGTGAT 360 3207 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGAACCTCAAGCTGGCCAAGCTGAGGTGAT 326 361 CAAGGATCCTGGCAGCGCGGGGCGATCTCCTCCATTGACTCTCCAAGATCACCTCGA 420	3267 CAAGGGATCCTGGCAGCCCTGGAAATTGCGCTTTGACTCTCTCCCAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGAGAAATTGCGCCTCTGAAAAGAGAAACTCGAAGACACTTCGAGGAAAATTGCGCCTCTGAAAAGAGAACGTGAACGTCACACGTCAAAATTGCGCCTCTTGAAAAGAGAAACGTGAACGTCAAAAATTGCGCTTCTCACCTTCAAAAACGTCAAACCTCAGCACCTCAAAATTCAGGCATTCAGCTCTCACCGTATAACCTCAGCACCACACACA	Qy 601 GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGGACTTTCTTT
	241 AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAATAGATGGACGACCTTGAAAGACT 300 3124 AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAATAGATCAGACCCTTCAAAGACT 3183 301 CCAGGAACTTCAAGAGGCCACGGATGAGCTGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360 3184 CCAGGAACTTCAAGAGGCCACGGATGAGCTGAGCTCAAGCTGCGCCAAGCTGAGTGAT 360 3184 CCAGGAACTTCAAGAGGCCACGGATGAGCTGAGCTCAAGCTGCGCCAAGCTGAGTGAT 3243 361 CAAGGAACCTTCAAGAGGCCAGGGCGTGGCGAGCTTGACTCTCCCAAGATCACCTCAAGATGACTCCCCAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCGAAGATCACCTCCAAAAACCTCCAATAAACTCCCCCAATAAACCTCCCCCAAAAAA	GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGGAGAACGTGAGCCACGTCAA [1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	541 TCTGGAAGACCTGAAATGGAAGTTCTGAGGGTGGCGAGGCGGGTCGAGGCGGGTCGGGGCGGGGCGGGC	661 TGFCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA 720		901 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960	1021 TATGTCTGAACTGGCTGGTGAATGTTTATGATACGGGACGAACGGGAGGATCCGTGT 1080	

1	00 00 00 00 00 00 00 0	RESULT 14 US-09-845-416-36 i Sequence 36, Application US/09845416 i Sequence 36, Application US/09845416 i Publication No. US20030171312A1 i GENERAL INFORMATION: APPLICANT: XIAO ITILE OF INVENTION: THEREOF TITLE OF INVENTION: THEREOF TITLE OF INVENTION: THEREOF CURRENT PILING DATE: 2001-04-30 PRIOR APPLICATION NUMBER: 60/200,777 PRIOR PILING DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: Patentin Ver. 2.1 ; SEQ ID NO 36
	ESULT 13 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 Sequence 34 Application US/0994516 TITLE OF INVENTION: DATE: 2010-04-30 FILE REPERROR: DELIAZ CURRENT FILING DATE: 2000-04-28 SOFTWARE: PARITH OF DATE: 2000-04-28 NUMBER OF SEQ ID NOS: 36 SOFTWARE: PARITH OF DATE: 2000-04-28 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: 2000-04-29 SOFTWARE: PARITH OF DATE: 2000-04-29 SOFTWARE: PARITH OF DATE: 200	

g

ò 셤 ò 엄 à g ò g ò 셤

ઠે g ò

```
4319 CCTICTGCATGATCTATCCAAATTCCAAGACAGTTGGGGTGAAGTTGCATCCTTTGGGGG 4378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3507
                                                                                                                                                                                                                                                                                                     CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3328 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 3387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3508 ccadgaactricaadaddccaacddargactrodaccricaactrocaectraactraagarus 3567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 27, Application US/09845416
| Sequence 27, Application US/09845416
| Publication No. US20030171312A1
| GENERAL INFORMATION:
| APPLICANT: XIAO, XIAO
| TITLE OF INVENTION: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE
| TITLE OF INVENTION: THEREOF
| TITLE OF INVENTION: THEREOF
| TITLE OF INVENTION: THEREOF
| TITLE OF INVENTION: THEREOF
| TITLE OF INVENTION: THEREOF
| TITLE OF INVENTION WINBER: US/09/845,416
| CURRENT FILING DATE: 2001-04-30
| PRIOR FILING DATE: 2001-04-28
| NUMBER OF SEQ ID NOS: 36
| SOFTWARE: PatentIn Ver. 2.1
| SEQ ID NO 27
| LENGTH: 5149
                                                                                                                                        CCTGTCTTTAAAACTGGCATCATTTCCCTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                        4199 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGAACAG
                                                                                                                                                                                                                                                               ATACCTITITCAAGCAAGTGGCAAGTTCAACAGGATTTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3208 CGACTITICCAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTICAAGAGGGGAATIGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3388 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1448 AAAATIGAACCIGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGAT
                 TATITATICACCOCCIGGAGCAAGACCAAATTIGGICAACGICCCTCTCCGGIGGA
                                                                                                                                                                                                                      1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGIACAIAGGGGCCTICAAGAGGGAATIGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                           4379 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 4419
                                                                                                                                                                                                                                                                                                                                                                                     1261 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
100.0%; Score 1301;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-845-416-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
US-09-845-416-27
                                                          1021
                                                                                                 4139
                                                                                                                                          1081
                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                               4259
                                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                     4079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                      g
                                                                                                                                                                                                                                                        요
                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                        Š
                                                                                            임
                                                                                                                             ò
                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 3238
                                                                                                                                                                                                                                                                                                                                                       AAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCTTGAAAGACT 3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caadegarcergecadecegregecarerecrearidaerererecaadareaeered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GABAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCCCACGTCAA 3598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 3658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 3898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   reacchdaaraargreagarrereagerraraggaereeceargaaacreegaagaereea 3958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAĞĞCCCTTTĞCTTĞĞATCTCTTĞAĞCCTĞTCAĞCTĞCATĞTĞATĞCCTTĞĞACCAĞCA 4018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                           181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTGAGCCACGTCAA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACCICAAGCAAAAIGACCAGCCCAIGGATAICCIGCAGATIAIIAAIIGITIGACCAC 960
                                                                                                                                                                                                                                             61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 120
                                                                                                                                                             1 CGACTITCCAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                         Gapa
                                                                                                                         ö
                                                                               Length 5060;
                                                                                                                      Indels
                                                                                                                         .
                                                                                  DB 10;
                                                                             Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
TYPE: DNA
CORGANISM: Homo sapiens
US-09-845-416-36
                                                                                                                                                                                                      3119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                    3179
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3899
                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
```

셤

à g ò g ò g ઠે d à ď ò 원 ò 유 ò

ઠે

CTCTCCAAGATCACCTCGA 420 	48 36		TGCAGGTGGCCGTCGAGGACCGAGTCAG 600	38	TIGCCCTACTATATCAACCA 720 	AAGCTCTACCAGTCTTTAGC 780 	NIGARACTCCGARGACTGCA 840 		NTTATTAATTGTTGACCAC 960 	AAGGTCCCTCTGCGTGGA 1020 	CGAACAGGGAGGATCCGTGT 1080 	CATITGGAAGACAAGTACAG 1140 	GACCAGCGCAGGCTGGGCCT 1200 	GAAGTTGCATCCTTTGGGG 1260 	G 1301
CAAGGATCCTGGCAGCCCGTGGGCATCTCCTCATTGACTCTCTCC 	gargecargegacitcgaggagaratigcgccictgaragagagacgtgaggccacgicar 	TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCTCT	ICTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTG 	GCAGCTGCATGAAGCCCACAGGACTTTGGTCCAGCATCT 	IGTCCAGGGTCCTGGGAAGAGCATCTCGCCAAACAAAGGGCCCTACTATATCAACCA 	cgagacticaaacaactigctgggaccatcccaaaatgaca 	81 IGACCTGAATAATGICAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840 	SAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCA 	caacctcaagcaaaatgaccagcccatggatatcctgcag 	TATTTATGACCGCCTGGAGCAGAGGGCACAACAATTTGGTC 	nangtgtctgaactggctgctgaatgtttatgatacgga 	cctgtcttttaaaactggcatcatttccctgtgtaaaga 	.41 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCGGGGCT 120 	CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGT 	CAGTAACATTGAGCCAAGTGTCCGGAGGTGCTTCCAATTT
361	421	481	541	.601	661 3868	721	781	841	901	961	1021	1081	1141	1201	1.4

earch completed: April 5, 2004, 16:33:49 ob time : 322.469 secs

```
27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                      (first entry)
13957
13957
13957
13957
13815
13815
13815
13815
3446
4414
5417
1434
4602
4602
                                                                                                                                                                                                                                                                                                                  WPI; 2002-049342/06.
WO200183695-A2,
                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                            (XIAO/) XIAO
                                                                                                                                                                                       21-AUG-2002
                                                                                                                                                                                                                                                          08-NOV-2001.
                          111357
111357
111357
11133.6
10085.2
10017.6
1016.6
                                                                             AAD37241;
                                                                                                                                                                                                                                                                                                       Xiao X;
                                                                                                                                                     RESULT 1
                                                                                                                                                            AAD37241
Human dys
Human dys
Human dys
Human dys
Human dys
Human dys
                                                                                                                                                                                                                                                                                                                                                                   Adeno-ass
DNA encod
DNA encod
                                                                                                                                                                                                                                                                                                                                                         Adeno-ass
Adeno-ass
                                                                                                                                                                                                                                                                                                                                                                                                Human dys
cDNA enco
                                      April 4, 2004, 11:55:32 ; Search time 335.709 Seconds (without alignments) 16463.377 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                         Adeno-ass
Adeno-ass
                                                                                                                                                                                                                                                                                                                                   Adeno-ass
                                                                                                                                                                                                                                                                                                                                                   Adeno-ass
                                                                                                                                                                                                                                                                                                                                                                                     Human dys
                                                                                                                                                                                                                                                                                                                                                                                           DNA encod
                                                                                                                                                                                                                                                                                                                                                                                                           DNA encod
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                         1 egactttccagcagttcaga......ceggagctgcttccaatttg 1301
                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                      Aad37238 1
Aad37237 1
                                                                                                                                                                                                                                                                                                                 Aad37234 B
Aad37230 B
Aad37259 B
Aad37258 Aad37257 B
                                                                                                                                                                                                                                                                                                                                                  Aad37256
Aad37262
                                                                                                                                                                                                                                                                                                                                                                                                     Abk82005 o
Abk82002 I
Aan90338 S
                                                                                                                                                                                                                                                                                                                                                                                    Aad06794
      GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                              hits satisfying chosen parameters:
                                                                                                   3373863 Begs, 2124099041 residues
                                                             US-09-845-416-10_COPY_1800_3100
                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                            nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                 AAD37234
AAD37230
AAD37259
AAD37258
AAD37258
                                                                                                                                                                                                                                                                                                                                                  AAD37256
AAD37262
                                                                                                                                                                                                                                                                                                                                                                   AAD37255
ABK81998
ABK81999
                                                                                                                                                                                                                                                                                                                                                              AAD37264
                                                                                                                                                                                                                                                                                                                                                                                    AAD06794
                                                                                                                                                                                                                                                                                                                                                                                                                AAN90338
                                                                                   IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                     genesequi980s:*
genesequi990s:*
genesequ2000s:*
genesequ2001as:*
genesequ2001bs:*
genesequ2002s:*
genesequ2002s:*
                                                                                                                                                                                                              geneseqn2003bs:*
geneseqn2003cs:*
                                                                                                                                                                 N_Geneseq_29Jan04:*
                                                                                                                                                                                                                         geneseqn2004s:*
                                                                                                                          Minimum DB seq length: 0 Maximum DB seq length: 20000000000
                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                      Total number of
                                                                   Perfect score:
                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                      OM nucleic
                                                                         Sequence:
                                                                                                    Searched:
                                       Run on:
                                                                                                                                                                                                                                                                      Result
No.
```

```
Aad37260 Adeno-ass
Abk81997 DNA encod
Aad48548 A rod sho
Aaz48568 A rod sho
Aaz48566 A rod sho
Aaz48566 A rod sho
Aaz48561 A rod sho
                                                                                                                                                                                                                                                 A248571 A rod sho
Abt33376 NOVX DNA
Abt33375 NOVX DNA
Abt41896 Toxicity
Abk81962 cDNA enco
                                                                                   Mouse isc
Shuttle v
Mus muscu
                                                                                                                               A rod sho
Human dys
                                        Human dys
Human bon
cDNA enco
cDNA enco
Human bre
Gene #228
Abk81959
Abt10904
Abt10904
Abs900
Abs70403
Abs70403
Abx81960
Abx99799
Abx18885
Aax18885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
Aax418885
                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
                                                                      ABK81960
ABI99799
AAT27558
AAV18885
                                                                                                                                                                          ABK81997
AAD37243
AAZ48568
AAZ48569
               ABT10904
ABN95786
ABS69900
                                                          ABS70403
                                                                                                                                                                                                                                                    AAZ48571
```

Human dystrophin rod, hinge and CR domain regions encoding DNA #2. AAD37241 standard, DNA, 1821 BP.

Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.

New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin

Example 1, Page 52-53; 71pp; English.

The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular

8 % 8 %

```
RESULT
                                                                             8 8
                                                                                                                                           ò
                                                                                                                                                                   d
                                                                                                                                                                                                 8
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                           \delta
                                                                                                                                                                                                                                                                                                                                                   g
                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGGCCCTTTGCTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
dystrophy (BMD) in a mammalian subject. The present sequence is human
dystrophin DNA fragment encoding rods R23 and R24, hinge H4 and CR domain
regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Terreraggerecergagagagacareregecaaacaaagageceraerarareaacaa 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 882
                                                                                                                                                                                           103 ceactiticcaecaetrcaeaaecaeaacearetraraeaeeectrcaaeaeeeaa 162
                                                                                                                                                                                                                                                     222
                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                         342
                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGTGAT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ccaddaactricaadaddccacdaddardadcridaaccrcaadcrigccocaagcridagara 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCACGTCAA 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            scaecrecareaaecccacaesearcriregrecaecarercaecaerrirerrirecaere 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rgaccrigaaraargreagarrereagerraraggaereceargaaacreegaagaereea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 900
                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                         AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                     163 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                   GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                gectrirggaaggacragagaacreraccaggagececcagagagerecereagagag
                                                                                                                                                                                                                                                                                                                                              <u> AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA</u>
                                                                                                                                                                                                                                                                                                                                                                      AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                     AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACCTTGCTCGCCACTTACCACTTTGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCTGCATGAAGCCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCTTTCCAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                   ö
                                                                                                       DB 6; Length 1821;
                                                                        Sequence 1821 BP; 506 A; 451 C; 447 G; 417 T; 0 U; 0 Other;
                                                                                                                                 Indels
                                                                                                                                   ..
                                                                                                   100.0%; Score 1301;
100.0%; Pred. No. 0;
ive 0; Mismatches
                                                                                                                   Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                223
                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                           283
                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                     343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                     121
                                                                                                       Query Match
```

g

8 8 8 8

à

g

8 B 8

ò

g

8 6 8

ò

a

à

유 장

ò

9 8 8 8 ò

```
1242
                                                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                                                                                                      1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression custful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                        cereretritaaaaeregeeareatriceergigiaaageeacairiggaagaeaadaeag
                                  1243 ATACCITITICAAGGAAGIGGGAAGITCAACAGGATITIGTGACCAGGCAGGCTGGGCCC
                                                                                                                                                                                                                                              CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cerrerecarearrecrarecaaarrecaagacaerregereaagrugearecarecriregee
                                                                                                                       TATGTGTGTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                             TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                            ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human dystrophin rod, hinge and CR domain regions encoding DNA #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 1; Page 45-46; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAD37232 standard; DNA; 2169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-NOV-2001
                                                             1063
                                                                                                                                                                                                                                                                                                                  1183
                                                                                                                                                                                                                                                                                                                                                                               1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1363
                                                                                                                       1021
                                                                                                                                                                                       1123
                                                                                                                                                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD37232;
961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xiao X;
```

1140

1470

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta3510 containing nucleotides 1-1668 (N-terminus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
TATITIATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTTGCGTGGA
                            rarrrargacceccresascaacaccacaacrarrrescaacercccrcrcrcressa
                                                                               CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                       ccigicititaaaacidecatcatiticccididaaadcatriidgaagacaagtacag
                                                                                                                                                                                   ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                   CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                   TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                  CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1751
                                                                                                                                                                                                                                                                                                              CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 1; Page 51-52; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human dystrophin minigene delta3510.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                            AAD37240 standard; DNA; 3510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (XIAO/) XIAO X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-NOV-2001.
                                                                                                                                                                                                                                                                                                                                              1711
                                 1411
                                                               1021
                                                                                           1471
                                                                                                                           1081
                                                                                                                                                         1531
                                                                                                                                                                                        1141
                                                                                                                                                                                                                      1591
                                                                                                                                                                                                                                                    1201
                                                                                                                                                                                                                                                                                  1651
                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD37240;
   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                      ઠ
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                       g
                                                                                    쉱
                                                                                                                       ò
                                                                                                                                                                                                                                                                                                        ò
                            셤
                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rerecededercergededadagecarerecedadadadageceraerarareaded 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           daaddcccrrrrdcrrrdaarcrcrrraadccrcrcraccarcraardccrrdcarcaccaca 1350
                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                690
                                                                                                                                                                                                                                                                                                                                                                                                                       AAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGGCCCTTGAAGACT 750
                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ccaegaactrcaagaggccacegargagcrogaccrcaagcrececcaagcreaggrear 810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTTGACTCTCCAAGATCACCTCGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAPAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAA 930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               reaccineciceccaecinaccacininesecanicaecicicaccenaraaccicaecac 990
                                                                                                                                                                         510
                                                                                                                                                                                                                                     AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGGA 570
                                                                                                                                                                                                                                                                                                   eccrirregaaggacragagaaacrcraccaggagcccagagagcreccrccragagagaga 630
                                                                                                                                                                                                                                                                                                                                 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 240
                                                                                                                                                                                                                                                                                                                                                                                              AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 300
                                                                                                                                           9
    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rcradaadaccradacaccadarddaadcrrcracadgarddccarcaadaccaadrcad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1171 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGGCCCTTTGCTTGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caadegarccreecaecccerededearcrecrearreacrerereadarcaecreea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                        cgactrrccagcagrrcagaagcagaacgargracaraggggccrrcaagagggaarrgaa
                                                                                                                                                                                                                                                                     GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                    CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                          1 CGACTITCCAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGAATIGAA
                                                                                                                                                                                                       AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
    fragment encoding rods R22, R23 and R24, hinge H4 and
                                                                                                               Gaps
                                                                                                             °,
                                                                               6; Length 2169;
                                                623 A; 529 C; 524 G; 493 T; 0 U; 0 Other;
                                                                                                             0; Indels
                                                                                 g
                                                                              ; Score 1301; D; Pred. No. 0; 0; Mismatches
                                                                              100.0%;
ilarity 100.0%;
Conservative 0;
                                                                                             Best_Local Similarity
Matches 1301; Conserv
                                                     Sequence 2169 BP;
      dystrophin DNA
domain regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1291
                                                                                                                                                                                                                                                                                                    571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                            451
                                                                                                                                                                                                            61
                                                                                                                                                                                                                                        511
                                                                                                                                                                                                                                                                                                                                                                  631
                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                               691
                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                   Query Match
Best Local S
                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 မ္က
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ન
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Я
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ጵ
                                                                                                                                                                            ŏ
                                                                                                                                                                                                            ≿
                                                                                                                                                                                                                                        б
                                                                                                                                                                                                                                                                        ≿
                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                      ≿
                                                                                                                                                                                                                                                                                                                                                                ठ
                                                                                                                                                                                                                                                                                                                                                                                                 ⋩
                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ⋧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ≿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     পূ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ≿
                                                                                                                                                    ۶,
```

```
2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reaccidaaraarereadarrereaderraragaeredeceargaaereegaagaereea 2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACCTCAAGCAAAATGACCAGGCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 2738
                                                                                                                                                              1838
                                                                                                                                                                                                                                                                                   1958
                                                                                                                                                                                                                                                                                                                                            2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caadddarccroccadccdarddcarcrccrcarrdacrcrccaadarcaccrcda 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ccacactcaaacaactrccrcccacatccaaaarcacaacactcraccactcrracc
                                                                                                      ö
                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACCICAAGCAAAAIGACCAGCCCAIGGAIAICCIGCAGAITAITAAIIGIIIGACCAC 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCCAGGGTCCCTGGGAGAGACCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA 720
                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                          241 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 300
    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGGCCCTTTGCTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                      1779 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                             61 PACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                     GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                 1899 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAG
                                                                                                                                                                                                                                                                                                                 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                  CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2079 ccaegaactrcaagaggccacggargagcrggaccrcaagcrgcgccaagcrgaggrgar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGCTGCATGAAGCCCACAGGAACTTTGGTCCAGCATCTCAGCACTTTTCCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                   1 CGACTITICCAGCAGITICAGAAGCAGAACGAIGIACAIAGAGGCCTICAAGAGGGAATIGAA
   H4
hinge H1 and rods R1 and R2), 8407-10227 (rods R23 and R24, hinge CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                      .
0
                                                                          DB 6; Length 3510;
                                             Seguence 3510 BP; 1073 A; 787 C; 828 G; 822 T; 0 U; 0 Other;
                                                                                                        0; Indels
                                                                          s; Score 1301; D
s; Pred. No. 0;
0; Mismatches
                                                                          100.0%;
                                                                           Query Match
Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
       SSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                 8
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                        ਨ੍ਹ
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठे
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                        ≿
                                                                                                                                                                                                ጽ
                                                                                                                                                                                                                                                                                                                                                                           à
```

```
2858
                                                                                                                                   1140
                                                                                                                                                                 2918
                                                                                                                                                                                                 1200
                                                                                                                                                                                                                                  2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy minigene delta3531 containing nucleotides 1-1341 (N-terminus,
1020
                                                                                                                                                                                                                                                                                                  2979 cerreracardearterarecaaarrecaagacagrigggraagrigearecriregggg 3038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                      ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                    CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
TATITIATGACCGCCTGGAGCAAGAGCACAACATTTGGTCAACGTCCCTCTGCGTGGA
                            TATITIATIGACCECTIGGAGCAAGAGCACAACATITIGGTCAACGTCCTCTCTGCGTGGA
                                                                                               <u>rargretergaacregergergargirirargaracegeaceaacaegeacerer</u>
                                                                  TATGTGTCTGAACTGGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human, dystrophin minigene, muscular, gene therapy, utrophin, spect:
adeno-associated virus, AAV, Duchenne muscular dystrophy, DMD, BMD,
Becker muscular dystrophy, ds.
                                                                                                                                                                                                                                                                                                                                                               3039 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 3079
                                                                                                                                                                                                                                                                                                                                    CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 1; Page 50-51; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human dystrophin minigene delta3531.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37238 standard; DNA; 3531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08-NOV-2001
                                                                                                2799
                                                                                                                                                                                                     1141
                                                                                                                                                                                                                                     2919
                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAD37238;
                                                                    1021
                                                                                                                                    1081
                                                                                                                                                                     2859
 961
                                   2739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37238
                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                 ò
                                                                                                                                                          g
                                                                                                                                                                                              8
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                   qq
                            셤
                                                                  ò
```

1140

2999

ដ្ឋដូង

ਖੋ

≿ ŏ ⋩ ત્ ⋧ હ ⋩ ð ≿ વ ≿ હ

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta1849 containing nucleotides 1-1668 (N-terminus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
TATITIATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                2760 TATITATGACCGCCTGGAGCAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                             CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                            ATACCITITCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                               ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                       CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                    2820 TATGTGTGTGTGGGTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                     ccrercrirraaaacrescarcarrirccrereraaascacarrresaasacaastacas
                                                                                                                                                                                                                                                                                                                             CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                 <u>TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human, dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
                                                                                                                                                                                                                                                                                                                                                                                                                                  3060 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 3100
                                                                                                                                                                                                                                                                                                                                                                                                              CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1:, Page 48-49; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human dystrophin minigene delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAD37237 standard; DNA; 3858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-NOV-2001.
                                                                                 1021
                                                                                                                                                                                                       2880
                                                                                                                                                                                                                                                1141
                                                                                                                                                                                                                                                                                        2940
                                                                                                                                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                       3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD37237;
                                                                                                                                                                                                                                                                                                                                                                                                              1261
  196
                                                                                                                                                               1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                   à
                                                                                                                 g &
                                                                                                                                                                                            셤
                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                               ሯ
                                                                                                                                                                                                                                                                                                            1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2700 CAACCTCAAGGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTGACCAC 2759
                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960
                                                                                                                                                                                   9
  ೪
                                                                                                                                                                                     1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                             1800 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                    AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                       1860 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                          AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2100 ccascaacricaadadeccacedareacricaaccrcaaecrececcaaccrdaedrar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2160 caagggarccrogcagcccgrogggarcrccrcarraacrcrccaagarcaccrcaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2280 reaccriscroscogornaccacriroscarricascricroscogacoranaaccroascac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2340 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGGACTTTTCTTTTCCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTCCAGGGTCCCTGGGAGAGGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2520 cgagacicaaacarcrigcigggaccarcccaaaargacagagcrcraccagrcriragc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2640 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
    and
                                                                                                                                                                                                                                                                                                                                                     GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1980 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                Gaps
  H4
hinge H1 and rod R1), 8059-10227 (rods R22, R23 and R24, hinge domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                              ô
                                                                                                      DB 6; Length 3531;
                                                               Sequence 3531 BP; 1071 A; 809 C; 824 G; 827 T; 0 U; 0 Other;
                                                                                                                                              0; Indels
                                                                                                    100.0%; Score 1301;
100.0%; Pred. No. 0;
iive 0; Mismatches
                                                                                                    Query Match
Best Local Similarity 100
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106
                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
```

ŏ ≿ ठ ≿ ă

≿

ð ≿ ä ⋩ ă ≿ 8 ≿ 9 ⋩

⋩

φ

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprisaing dystrophin minigene operably linked to an expression control element. The dystrophin minigene in a correct of the dystrophin minigene in a correct of the dystrophin minigene in second to the control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophin minigene delta3990 containing nucleotides 1-1668 (N-terminus,
TATITIATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 1; Page 46-47; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human dystrophin minigene delta3990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                      AAD37234 standard; DNA; 3999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-NOV-2001
                                                                                                                                                 3207
                                                                                                                                                                              1141
                                                                                                                                                                                                           3267
                                                                                                                                                                                                                                         1201
                                                                                                                                                                                                                                                                    3327
                                                                                                                                                                                                                                                                                                  1261
                                                             1021
                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAD37234;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kiao X;
                                                                                                                                                                                                                                                                                                                                                                                         AAD37234
                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                à
                            g
                                                            8
                                                                                  ద
                                                                                                                   8
                                                                                                                                           셤
                                                                                                                                                                           ò
                                                                                                                                                                                                                                         ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3026
                                                                                                     ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3086
                                                                                                                                                                                                                                                                                                                                                                                                    CAAGGGATCCTGGCAGCCGGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2127 ceactificcaecaeticaeaaecaeaacearetacataeeeccifcaaeaeaeaeaea 2186
                                                                                                                                                                                                                          2187 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTTCTGACAGAGCA 2246
                                                                                                                                                                                                                                                                                GCCTTTGGAAGGACTAGAAACTCTACCAGAGCCCCAGAGAGCTGCCTCCTGAGGAGAG 2306
                                                                                                                                                                                                                                                                                                                                             Accecadaarereacredecriciacdaaadcagecreadgagereaaracreagredea 2366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccassaacrrcaasasccacssaarsaacrssacrcaascrscassccaascrsaasrsar 2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                         121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTGAGGAGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGGAACTICAAGAGGCCACGGAIGAGCIGGACCTCAAGCIGCGCCAAGCIGAGGIGAI 360
                                                                                                                                                                                                                                                                                                                                                                           TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
    H4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gcagcracardaagcccacadagaacririgarccagcarcricagcacriricarricadad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGGTCTACAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2907 IGACCTGAATAATGICAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            reaccrrecreecaecrraceaerrressearreacrereaceraraaccreaseae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGCTGCATGAAGCCCACAGAGCTTTTGGTCCAGCATCTCAGCACTTTTTTCCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                     1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGIACAIAGGGCCTICAAGAGGGAAIIGAA
                                                                                                                                                                                               AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                   AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGGGATCCTGGCAGCCGGTGGGCGATCTCTCTCTTTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rerecassereceressassassearecereceaascaasereceraciarareaaeca
      hinge
                                                                                                        ö
                                                                             DB 6; Length 3858;
    hinge H1 and rods R1, R2), 8059-10227 (rods R22, R23 and R24, and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                               Sequence 3858 BP; 1189 A; 866 C; 905 G; 898 T; 0 U; 0 Other;
                                                                                                        Indels
                                                                                                          ..
0
                                                                          Score 1301; I Fred. No. 0; 0; Mismatches
                                                                          100.0%;
ilarity 100.0%;
Conservative 0;
                                                                                             Local Similarity
                                                                                             Best Local Simi
Matches 1301;
                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2547
                                                                                                                                                                                                                                                                                     2247
                                                                                                                                                                                                                                                                                                                                                 2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3027
                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901
                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
       នេដ្ឋន
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                        8
                                                                                                                                                                 d
                                                                                                                                                                                               ò
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
```

```
1140
                                                                                                                                                                                                                                                                                                                                                         3266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cerrergeargaricaartecaagacagirgegreaagregargerecarecerrege
                                                                                                                                                                                                                                                                                                                                                         ccrercrititaaaacrescarcatritcccreraaaacaacatritesaagaacaagracag
ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                          CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                            3147 TATGICICICAACTGCTGCTGAATGITTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3387 cáchaacarhdagccaaghdrecegaachgchrecaarrig 3427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
```

1260

3527

3467

3407

SSSS

Ū

ŏ

≥

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element, The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (BMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is human dystrophy minigene delta4173 containing nucleotides 1-1992 (N-terminus,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                         TATITIATGACCGCCTGGAGCAGAACACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                    TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAAGGGAGGATCCGTGT
                                                                                            CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                ccreminalalacingcarcariticcingralacacariticgalacagracag
                                                                                                                                                                                                                                                             CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                       ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                          3528 CAGTAACATTGAGGCGAGTGTTCGGAGCTGCTTCCAATTTG 3568
                                                                                                                                                                                                                                                                                                                                                                           CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1; Page 43-44; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human dystrophin minigene delta4173.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멾
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAD37230 standard; DNA; 4182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-NOV-2001.
                                                                                                                                                                                                                                                               3408
961
                                    3228
                                                                                                            3288
                                                                                                                                                                                    3348
                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                       3468
                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD37230;
                                                                          1021
                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD3723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                              d
                                                                                                          음
                                                                                                                                                                                임
                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ठे
                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3047
                                                                                                                                                                                                                                                                                                                                                                                                                                    2507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3107
                                                                                                                                                                                                   2268 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA 2327
                                                                                                                                                                                                                                                                                                                                               2568 CCAGGAACTICAAGAGGCCACGGAIGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 2627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCCCACGTCAA 2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2748 IGACCTIGCICGCCAGCTIACCACTITIGGCCATICAGCICTCACCGTATAACCTCAGCAC 2807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCA 2987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3168 CAACCTCAAGGAAAATGACCAGCCCATGGATATTCCTGCAGATTATTAATTGTTTGACCAC 3227
                                                                                                                                  ö
                                                                                                                                                                                                                                                                                 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 2387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 3167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                       GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                  AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGGGATCCTGGCAGCCCGTGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 480
  H4
                                                                                                                                                                    9
hinge H1 and rods R1 and R2), 8059-10227 (rods R22, R23 and R24, hinge and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rcregaagaccreaaacaccagaregaagcrrcrecaggregeceregagaccaagreag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  casascreaacaacregeaccarccaaaaargacagecreraccagrerrasc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGAGGTCAATACTGAGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGGGATCCTGGCAGCCGTGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                                                                                                                                                    1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGGAATTGAA
                                                                                                                                                                                                                                               AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                  Gaps
                                                                                                                                ö
                                                                                            DB 6; Length 3999;
                                                      Sequence 3999 BP; 1223 A; 907 C; 933 G; 936 T; 0 U; 0 Other;
                                                                                                                                0; Indels
                                                                                          Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                     2328
                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                      2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3108
                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
```

≿ ă

P

ò d

g ò

à

à g

```
TATTIATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Adeno-associated virus vector plasmid, AAV-MCK-3510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 1; Page 63-65; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD37259 standard; DNA; 4476 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08-NOV-2001
                                                      3411
                                                                                                                                                 3471
                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                 3531
                                                                                                                                                                                                                                                                                                   1141
                                                                                                                                                                                                                                                                                                                                               3591
                                                                                                                                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAD37259;
                                                                                                       1021
       961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                       쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                         a
                                                                                                     à
                                                                                                                                       g
                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 2810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTTTGGAAGGACTAGAAAACTCTACCAGGAGCCCAGAAAGTGCTGCCTCCTGAGGAGA 2630
                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                           2451 ceactriccaecaerrcaeaaccaeaceareracaraeaeeecrrcaaeaeeeaarreaa 2510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Accecagaaneneacrececenteraceaaccacecreaceacereareararacreaged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360
                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 300
       hinge H1 and rods R1, R2 and R3), 8059-10227 (rods R22, R23 and R24, hinge H4 and CR domain) and 11047-11058 (dystrophin last 3 amino acids)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2691 AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAGGTGAGGCGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rcresaasaccreaacaccasaresaascrrcrecassrsscerceassaccasscas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6ca de crista rela de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de contra de cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cgagactcaaacaactrgcrgggaccarcccaaaargacagactcraccagrcrrragc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      caaccrcaaggaaaargaccagcccarggararccrgcagarrarrarrarrgaccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAGGCCCTTTGCTTGGATCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                            1 CGACTITICCAGCAGITCAGAAGCAGAACGAIGTACATAGGGCCTICAAGAGGGAATIGAA
                                                                                                                                                                                                                                                                                                                             AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                      2511 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                              ô
                                                                                                                               DB 6; Length 4182;
                                                                                Sequence 4182 BP; 1309 A; 927 C; 970 G; 976 T; 0 U; 0 Other;
                                                                                                                                                                              Indels
                                                                                                                                                                              0
                                                                                                                               Query Match
100.0%; Score 1301;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3351
                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
```

q

q $\dot{\delta}$

ò

셤

ò d ò

ò

g

g

ò

유 ò a ò a à qq à g ð

ò

```
3651 cerreracardarrerarecaaarrecaadacagridddaagridcarecrirddgd 3710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) element. The dystrophin minigene operably linked to an expression control element, in a recombinant adeno-associated with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                           TATTTATGACCGCCTGGAGGAAGAACACAACAATTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                          CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                     TATGTGTCTGAACTGGTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3711 cagraacarreaeccaaerereceeaecrecriccaarrie 3751
```

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is
                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                   21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-NOV-2001
                                                                                3555
                                                                                                                              3615
                                                                                                                                                      1141
                                                                                                                                                                                                    1201
                                   3495
                                                                                                                                                                              3675
                                                                                                                                                                                                                            3735
                                                                                                                                                                                                                                                     1261
                                                         1021
                                                                                                                                                                                                                                                                                                                                                           AAD37258;
            196
                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Xiao X;
                                                                                                                                                                                                                                                                                                                            AAD37258
                                                                                                                                                                                                                                                                                                                                        g
                                                 ें
                                                                           셤
                                                                                               S S
                                                                                                                                                     ò
                                                                                                                                                                        d
                                                                                                                                                                                               δ
                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     reaccreaararercaearrereacerraraeaacreecareaaacreecaaeacreea 3374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2594
                                                                                                                                                                                                                                        2714
                                                                                                                                                                                                                                                                                       2774
                                                                                                                                                                                                                                                                                                                            rerecasserecerssasasasasasareresecaaacaaasiseeceraerarareaacea 3254
                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2955 GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAA 3014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTGGCTGCATGTGATGCCTTGGACCAGCA 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960
                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                             301 CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360
                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                            2535 cgaciticcagcagricagaagcagaacaargracaragaggccircaagagggaarrgaa
                                                                                                                                                                    AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                     2595 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGGGA
                                                                                                                                                                                                                  121 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCTGAGGAGAG
                                                                                                                                                                                                                                 2655 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGGCCCAGAGAGACTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                    2715 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGGCGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rcresaasaccreaacaccasaresaascrrcrecassrescercsassacsassass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                     1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGTACAIAGGGCCITCAAGAGGGAATIGAA
                                               Sequence 4476 BP; 1252 A; 1096 C; 1127 G; 1001 T; 0 U; 0 Other;
                                                                                              ö
                                                                       DB 6; Length 4476;
                                                                                              0; Indels
                                                                      100.0%; Score 1301;
100.0%; Pred. No. 0;
itive 0; Mismatches
                                                                                 Best Local Similarity 100. Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3315
                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                     61
                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                      ď
                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                              ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                   원
                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ठ
                                                                                                                                             ă
                                                                                                                                                                     ≿
                                                                                                                                                                                            ă
                                                                                                                                                                                                                   ⋧
                                                                                                                                                                                                                                        સ
                                                                                                                                                                                                                                                                   ⋩
                                                                                                                                                                                                                                                                                      ઠ્
                                                                                                                                                                                                                                                                                                                 ⋩
                                                                                                                                                                                                                                                                                                                                                         à
```

```
cerrergeardarrerarceaarrecaagacagrigggrgaagrigearecarecrirgggg 3794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene therapy; utrophin; spectrin; muscular dystrophy; DMD; BMD;
                                     CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                          ccrercrititaaaacreecarcarricccrercraaaecacarrigeaaeacaagracae
                                                                                                                                                                                                                                                                                                                                                                           ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                   CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
TATTTATGACCGCCTGGAGCAAGAGCACAACATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 3835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adeno-associated virus vector plasmid, AAV-MCK-3531.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; dystrophin minigene; muscular; adeno-associated virus; AAV; Duchenne Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 1; Page 62-63; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37258 standard; DNA; 4498
```

```
원
                                                                                                                                                                              g
                                                                                                                                                                                                                              셤
                                       셤
                                                               ò
                                                                                       a
                                                                                                             à
                                                                                                                                                            ò
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3456
                                                                                                                                                                                                                                           2736
                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                            CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGAATTGAA 2616
                                                                                                                                                                                              2617 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 2676
                                                                                                                                                                                                                                                                                         2796
                                                                                                                                                                                                                                                                                                                                    AAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACT 2856
                                                                                                                                                                                                                                                                                                                                                                               ccaggaacricaagaggccacggargagcrggaccrcaagcrgcgccaagcrgaggrgar 2916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GALAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCCCACGTCAA 3036
                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin miniqenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                            9
                                                                                                                                                                                                                                    GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3337 TGACCTGAATAAAGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            casaactcaactractgasaccarccaaaatsacasasctctaccastrage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                            1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                        AACTAAAGAACCTGTAATCATGAGTACTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                      GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                  AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                  AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                              AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                        CAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCTTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                        Sequence 4498 BP; 1251 A; 1118 C; 1123 G; 1006 T; 0 U; 0 Other;
                                                                                                      ö
                                                                               DB 6; Length 4498;
                                                                                                    Indels
                                                                                                      0;
                                                                             ; Score 1301; D
; Pred. No. 0;
0; Mismatches
                                                                              Query Match
Best Local Similarity 100.0%;
Matches 1301; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3397
                                                                                                                                                   2557
                                                                                                                                                                                                                                            2677
                                                                                                                                                                                                                                                                                         2737
                                                                                                                                                                                                                                                                                                                                      2797
                                                                                                                                                                                                                                                                                                                                                                                  2857
                                                                                                                                                                                                                                                                                                                                                                                                                               2917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3277
                                                                                                                                                                         61
                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
   8888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                         \delta
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                              à
                                                                                                                                                   셤
                                                                                                                                                                         \stackrel{\lambda}{\circ}
                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                  à
```

```
3756
3457 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 3516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New dystrophin minigene for treating Duchenne or Becker muscular.
dystrophy comprises an N-terminal domain or modified N-terminal domain,
rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spectrin;
BMD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                                          CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                  ccrercrititaaaacrescarcatritcccrereraaascacatritseaasacaacracas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATACCTITITCAAGCAAGTGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                       TATTTATGACCGCCTGGAGCAAGAGCACAACTATTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                   TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                     ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCCAGGCTGGGCCT
                                                               TATITATGACCCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Adeno-associated virus vector plasmid, AAV-MCK-delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3817 cagraacarreagccaagrerccegagcrecrrccaarrre 3857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 61-62; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37257 standard; DNA; 4825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Unidentified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-NOV-2001
                                                                                                                              3517
                                                                                                                                                                                                                                                  3577
                                                                                                                                                                                                                                                                                                                                                                            3637
                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1261
                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD37257;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chimeria.
                                                                  961
                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
```

```
rarirargacceccredadecadedecadadriregreaderecerecerecered
                                                                                           TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                TATGTCTCTCAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGGGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 1; Page 68-70; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                AAD37263 standard; DNA; 4848
                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cytomegalovirus.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-NOV-2001
                                                                  3844
                                                                                                                    3904
                                                                                                                                              1081
                                                                                                                                                                        3964
                                                                                                                                                                                                                                                                            4084
                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                4144
                                                                                                                                                                                                                                                                                                                                                                                                                         AAD37263;
                                                                                             1021
                                                                                                                                                                                                 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chimeric.
                                           961
                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ношо
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                임
                                                                                           ò
                                                                                                               ద
                                                                                                                                              ò
                                                                                                                                                                 셤
                                                                                                                                                                                                ò
                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                             임
                                                                                                                                                                                                                             2944 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 3003
                                                                                                                                                                                                                                                                                          3063
                                                                                                                                                                                                                                                                                                                                              3123
                                                                                                                                                                                                                                                                                                                                                                                                3183
                                                                                                                                                                                                                                                                                                                                                                                                                                            3184 CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAI 3243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3304 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAAGAACGTGAGGCCACGTCAA 3363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3364 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 3423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3544 TGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCA 3603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3664 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 3723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3724 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 3783
                                                                                                                                 ö
                                                                                                                                                                                   2884 ceactriccaecaerrcaeaaccaeacearerateracaraeecerrcaaeaeeeaarreaa 2943
  control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840
                                                                                                                                                                                                                                                                 121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTGAGGAGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGGGATCCTGGCCGGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960
                                                                                                                                                           1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                              AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                3004 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGA
                                                                                                                                                                                                                                                                                                                   181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                            3064 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                        3124 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3424 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601 GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCTACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGACTCAAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGGCCCTTTGCATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                               Sequence 4825 BP; 1369 A; 1175 C; 1204 G; 1077 T; 0 U; 0 Other;
                                                                                                                                 ;
0
                                                                                                         DB 6; Length 4825;
                                                                                                                                  Indels
                                                                                                                                 ;0
                                                                                                       b; Score 1301; E
b; Pred. No. 0;
0; Mismatches
                                                                                                         100.0%;
                                                                                                                      Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                           Query Match
        88888888
                                                                                                                                                             ጵ
                                                                                                                                                                                   Ą
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                     ਨ੍ਹ
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                          참 용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ď
                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                       ਨੇ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ਨ੍ਹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ጽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ਨ੍ਹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ⋧
```

```
1140
                                                                                  4023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     spectrin;
BMD;
                                                                                                                                                                                                                               CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                          cerrerecarearrerarecaaarrecaadacaarregereaagrigearecerreges
CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                      cerenerrinaaaacreecarearrineeerereraaaccaerrineeaacaacaacae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG
```

ठ g ઠે g ò g à 셤 ò 吕 ò В à В à 엄 ò 셤 à 임 ò 셤 ò 유

```
g
                                                                                ठे
                                                                                                                       셤
                                                                                                                                                                       ò
                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                                                                  ઠ
                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                          3026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3806
                                                                                                                                                                                                                                                                                                             2966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3266
                                                                                                                                                                                                                                     Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a cytomegalovirus (CMV) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTTTGGAAGGACTAGAAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                 2907 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                       AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTTTGGAAGGACTAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3147 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAAAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGGGATCCTGGCAGCCGGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  caagggarccrogcogcogrocarccrocarroacrorocaagarcaccroga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              327 GAAAGTCAAGGCACTTCGAGGAAATTGCGCCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   renegaagacengaacaccaganggaagernenecaggnegecenegaggaccaagneag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGCCCTTTGCTTTGGATCTCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                        1 CGACTITICCAGCAGITICAGAAGCAGATGIACAIAGGGCCTITCAAGAGGGAAIIGAA
                                                                                                                                                                                                                                                                                                                                                  AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAGCGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                     .
0
                                                                                                                                                          Sequence 4848 BP; 1405 A; 1144 C; 1180 G; 1119 T; 0 U; 0 Other;
                                                                                                                                                                                                Length 4848;
                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                  DB 6;
                                                                                                                                                                                                                                   0
                                                                                                                                                                                              Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            2967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3507 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3567
                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
```

셤

ò

g

ઠે

 $\stackrel{>}{\circ}$

```
1080
                                                                                                                                                                   3986
                                                                                                                                                                                                      1140
                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                         4106
                               3807 caaccicaagcaaaargaccagcccarggararccrgcagartarraarraarrgaccac 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, H1 and domains and cysteine-rich domains of dystrophin or utrophin genes. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New dystrophin minigene for treating Duchenne or Becker muscular.
dystrophy comprises an N-terminal domain or modified N-terminal domain,
rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                TATITIATIGACCCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                 TATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                  TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                            TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                        CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                       cereficiriraaaacrescarearriceersistaaaseacarrirasaasaaaasaasa
                                                                                                                                                                                                                                                                        ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                           ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                            CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                                                                                               Human, dystrophin minigene; muscular; gene therapy; utrophin; s
adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD;
Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adeno-associated virus vector plasmid, AAV-MCK-delta3990
                                                                                                                                                                                                                                                                                                                                                                                                             CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                      4167 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 4207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 1; Page 59-60; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD37256 standard; DNA; 4966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-APR-2001; 2001WO-US013677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W0200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08-NOV-2001
                                                                                                 3867
                                                                                                                                                                     3927
                                                                                                                                                                                                                                         3987
                                                                                                                                                                                                                                                                                                         4047
                                                                                                                                                                                                                                                                                                                                            1201
                                                                                                                                                                                                                                                                                                                                                                               4107
                                                                                                                                    1021
                                                                                                                                                                                                      1081
                                                                                                                                                                                                                                                                          1141
                                                                                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chimeric.
901
                                                                  961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAD37256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Xiao X;
```

8888888888888

a C

ð d ò 셤 ò 셤

ò

ò

쉽 à g

à 임 ò g ð g ò 엄 ò 셤 ò a ₹ 엄 ઠે a à

```
4225 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTGAAGTTGGGTGAAGTTGCATCCTTTGGGGG 4284
3865 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 3924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N^{\star}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; dystrophin minigene; muscular; gene therapy; utrophin; spectrin; adeno-associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD; Becker muscular dystrophy; ds.
                                             901 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                  3925 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                      3985 TATTTATGACCGCCTCGAGCAAGACCAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                 1021 TATGTGTCTGAACTGGCTGCTGAATGTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                            4045 TATGIGICTGAACTGGCTGCTGAATGTTATGATACGGGACGAACAGGGAGGAGCGGGT
                                                                                                                                                                                                                                                                                                   1081 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                            4105 ccrercititaaaactescarcattreccrereraaascacattresaasaacas
                                                                                                                                                                                                                                                                                                                                                                                     1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                              4165 ATACCTTTTCAAGCAAGTGCCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGG
                                                                                                                               961 TATTIATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Adeno-associated virus (AAV) vector plasmid, AAV-CMV-delta3990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1261 CAGTAACATIGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4285 cagraacarreaeccaagrereceaagcrecrrecaarrie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 67-68; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAD37262 standard; DNA; 4990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-APR-2000; 2000US-0200777P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2002-049342/06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cytomegalovirus.
Unidentified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200183695-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (XIAO/) XIAO X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD37262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAD37262
ID AAD3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                       a
a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                      8
                                                                                                                               à
                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                   ceactriccaecaetreagaaccaeaceareracaraegecerreagaegearreaa 3084
                                                                                                                                                                                                                                                                                                                                                                                                                                                     3085 AACTAAAGAACCTCTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 3144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3205 AGCCCAGAAIGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 3264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3265 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 3324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rcragaagaccrgaacaccagarggaagcrrcracaggragccarcgagaccaagrcag 3624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCA 3744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    840
  invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 900
                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGGGATCCTGGCAGGCCGTGGGGCGATCTCCTCATTGACTCTCTCCAGAGATCACTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGTCAAGGGACTTCGAGGAGAAATTGCGCCCTCTGAAAGAAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                            1 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                              AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTTTGGAAGGACTAGAGAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         coadacreaacaacricerocaccareceaacaacaccacacceereraccacrerrece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTCCAGGGTCCCTGGGAGAGGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                 Sequence 4966 BP; 1403 A; 1216 C; 1232 G; 1115 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                          DB 6; Length 4966;
                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                          Score 1301;
Pred. No. 0;
                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                               Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                        3025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3745
                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                            Query Match
```

GAAGGCCCTTTGCTTTGCATCTCTTGAGCCTGTCACCTGCATGTGCCTTTGGACCAGCA

```
3768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3888
                                                                                                                                                                                                                                                                                                                                                                       3168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3708
                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                   CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGAGGAATTGAAA 3108
                                                                                                                                                                                                                                                                                                                                                                                                                                   3169 GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 3228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   780
terminal domains, rod repeats, utrophin or a spectrin gene, H1 and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin miniqene operably linked to an expression control element. The dystrophin miniqene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV exector plasmid construct containing human dystrophin miniques, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3589 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACGACGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rerecadegrecerdegadadecererececaacaadreceracrarareadea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3349 CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3409 CAAGGGATCCTGGCAGCCCGTGGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                          GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCCAGAGAGCTGCCTCCTGAGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                           CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                       AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cytomegalovirus (CMV) promoter and a small polyA signal sequence
                                                                                                                                                                             Sequence 4990 BP; 1439 A; 1185 C; 1208 G; 1158 T; 0 U; 0 Other;
                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                              Length 4990;
                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                              .
9
                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                              DB
DB
                                                                                                                                                                                                            100.0%; Score 1301;
100.0%; Pred. No. 0;
                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                            Query Match
Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3649
                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                         3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                            3049
                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     상
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                   음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
      ò
                                                                                                                                                                                                                                                                                                        셤
```

```
4248
                                                                                                                                                                                                                                                                             CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260
                                                                                                                                                                                                                                                                                                     correctedargarrerarecaaarrecaagacagrraggraggragerrecrrraggag 4308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New dystrophin minigene for treating Duchenne or Becker muscular dystrophy comprises an N-terminal domain or modified N-terminal domain, rod repeats, H1 and H4 domains and a cysteine rich domain of a dystrophin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    dystrophin minigene; muscular; gene therapy; utrophin; spectrin; associated virus; AAV; Duchenne muscular dystrophy; DMD; BMD;
                                                                                                                                                                                                    cerererritadaderesearearritecerereradadeedearritesadadadeade
                                                                                                                                                                                                                                           4189 AIACCTITICAAGCAAGIGGCAAGITCAACAGGAITITGIGACCAGGGAGCIGGGCCT
  gaageccerrregerregarererraagecrereageregarererragaceagea
                             CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                   caaccicaagcaaaaigaccagcccaiggaiairccigcagaiiaiiaaiigiiigaccac
                                                                                                   rarrrargacceccreeaecaaeaecaacaacaarrrreercaacercccrcrcreeesa
                                                                                                                            TAIGIGICTGAACTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                   CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Adeno-associated virus (AAV) vector plasmid, AAV-E-CMV-3849.
                                                                                                                                                                                                                                                                                                                                                       4349
                                                                                                                                                                                                                                                                                                                                CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                           CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Page 70-71; 71pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                     BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Becker muscular dystrophy; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-APR-2001; 2001WO-US013677.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-APR-2000; 2000US-0200777P
                                                                                                                                                                                                                                                                                                                                                                                                                     AAD37264 standard, DNA; 5060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-049342/06.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    adeno-associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cytomegalovirus.
Unidentified.
Chimeric.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200183695-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (XIAO/) XIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-NOV-2001
       3889
                                                      3949
                                                                                                       4009
                                                                                                                                                       4069
                                                                                                                                                                                1081
                                                                                                                                                                                                       4129
                                                                                                                                                                                                                               1141
                                                                                                                                                                                                                                                                                1201
                                                                                                                                                                                                                                                                                                         4249
                                                                                                                                                                                                                                                                                                                                 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD37264;
                                                                                                                               1021
                               901
                                                                               961
                                                                                                                                                                                                                                                                                                                                                         4309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xiao X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human;
                                                                                                                                                                                                                                                                                                                                                                                             RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                       Д
                             8 8 8
                                                                                                   g
                                                                                                                       8
                                                                                                                                                q
                                                                                                                                                                               ò
                                                                                                                                                                                                   g
                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                     Б
                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                      임
```

```
The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating buchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscule creatine kinase (MCK) enhancer, a cytomegalovirus (CMV) promoter and a small polyA signal sequence
```

Sequence 5060 BP; 1449 A; 1217 C; 1234 G; 1160 T; 0 U; 0 Other;

3899 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAAACTCCGAAGACTGCA	OY 841 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGTCTTGGACCAGCA 300	OY 901 CAACCTGAAGGAAAATGACCAGCCCATGGAIATCCTGCAGATATTAATTGACCAC 960	OY 961 TATITATGACCGCCTGGAGCACAGACACAACAATTGGTCAACGTCCCTCTCTGCGTGGA 1020 Db 4079 TATITATGACCGCCTGGAGCAAGAGCACAACAATTGGTCAACGTCCTCTCTGCGTGGA 4138	Oy 1021 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAAGGAGGAGGATCGTGT 1080	1081 C	CAG 423	4259 ATACCITITCAAG	OY 1201 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260	Oy 1261 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301	Db 4379 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 4419	RESULT 15 AAD37255 ID AAD37255 standard; DNA; 5149 BP. XX AAD37255; XX XX XX XX	-Aug-2002 (Lizsu eno-associated vir	man; dystrophin minigene; mu eno-associated virus; AAV; C cker muscular dystrophy; ds	A. Homo sapiens. OS Unidentified. OS Chimeric.	AA WO200183695-A2.	AA PD 08-NOV-2001.	XX PF 27-APR-2001; 2001WO-US013677. xx	AA PR 28-APR-2000; 2000US-0200777P. XX	PA (XIAO/) XIAO X.	AAA Xiao X;	XX DR WPI; 2002-049342/06.	XX New dystrophin minigene for treating Duchenne or Becker muscular PT dystrophy comprises an N-terminal domain or modified N-terminal domain, pr you you remain the domains and a cysteine rich domain of a dystrophin
අු	දු දු	Sy Sy	දු පු	ζ, d	à	දු දු	; 음	oy Dp	ò	qq	RESUL AAD37: ID XX AC XX	2 X 2	XXXX	\$888	18.	주요	X E X	{ K X	E S	Z I	žë:	z t t

Example 1; Page 57-59; 71pp; English

```
CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGC
                                                                                                                                                                                                                                  3928
                                                                                                                            3448
                                                                                                                                  301
                                                                                                                                                     3568
                                                                                                                                                            421
                                                                                                                                                                  3628
                                                                                                                                                                               3688
                                                                                                                                                                                            3748
                                                                                                                                                                                                  601
                                                                                                                                                                                                        3808
                                                                                                                                                                                                               661
                                                                                                                                               361
                                                                                                                                                                         481
                                                                                                                                                                                      541
                                                                                                                                                                                                                            721
                                                                                            121
                                                                                                                                                                                                                     dd
%X000000000000X8
                                                                  ò
                                                                        셤
                                                                               ઠે
                                                                                     셤
                                                                                                  셤
                                                                                                                            유
                                                                                                                                   ઠે
                                                                                                                                         셤
                                                                                                                                               ò
                                                                                                                                                     g
                                                                                                                                                            ò
                                                                                                                                                                  엄
                                                                                                                                                                         ò
                                                                                                                                                                               d
                                                                                                                                                                                     ઠે
                                                                                                                                                                                           g
                                                                                                                                                                                                  ò
                                                                                                                                                                                                        셤
                                                                                                                                                                                                               ò
                                                                                                                                                                                                                            à
                                                                                            \dot{\delta}
                                                                                                         ò
                                                                                                               임
                                                                                                                      à
```

셤 ઠે g ò 유 8 δ g 장염 ò D. a à ठ 3627 3807 3927 3447 3567 GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 3687 3747 3987 3387 3327 AAAATTGAACCTGCACTCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT 3507 720 780 3208 CGACTTTCCAGCAGTTCAGAAGCAGAAGGATGTACATAGGGCCTTCAAGAGGGGAATTGAA 3267 540 600 99 180 240 300 360 420 480 The present invention relates to an isolated nucleotide sequence encoding a dystrophin minigene. The minigene comprises N-terminal or modified N-terminal domains, rod repeats, utrophin or a spectrin gene, HI and H4 domains and cysteine-rich domains of dystrophin or utrophin genes. The invention also relates to a recombinant adeno-associated virus (AAV) comprising dystrophin minigene operably linked to an expression control element. The dystrophin minigene in operable linkage with an expression control element, in a recombinant adeno-associated virus or retrovirus is useful for treating Duchenne muscular dystrophy (DMD) and Becker muscular dystrophy (BMD) in a mammalian subject. The present sequence is AAV vector plasmid construct containing human dystrophin minigenes, a muscle creatine kinase (MCK) promoter and a small polyA signal sequence 120 réactrigereschaetraceactrigescaricasciereacetaraaceteace TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG 3868 TGTCCAGGGTCCCTGGGAGAGACCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTTCAGCTCTCACCGTATAACCTCAGCAC 61 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 3328 gecririggaagaacragagaaacreraccagaageeccagagagergeerecergagaaa CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT CAAGGGATCCTGGCAGCCGCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACTCGA GCAGCTGCATGAAGCCCACAGGACTTTGGTCCAGCATCTCAGCACTTTCCTACGTC 3268 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAAGAGAGCTGCCTCATGAGAAGA 181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 3508 ccadeaactrcaagaeeccaceearcaecreeaccrcaaecrececcaaecreaec CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCAAGATCACCTCGA GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGIACAIAGGGGCCTICAAGAGGGGAATIGAA Sequence 5149 BP; 1489 A; 1236 C; 1269 G; 1155 T; 0 U; 0 Other; 0 Ouery Match
Best Local Similarity 100.0%; Score 1301; DB 6; Length 5149;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches 0; Indels 0;

4407 4287 4408 cchriciacandanicianiccaaaniccaadacachidagiidaadiidcancchindagad 4467 4107 4227 1048 gaaggecerriecriegarererigageererereageigeargrearereregaeea 1228 raigiercigaacigecigerigaieritaidaracegeaceaacaegeaceareceier CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 4348 ATACCITITICAAGCAAGTGGGAAGTTCAACAGGATTTTGTGACCAGGCGGGGGCTGGGCCT 1201 CCTTCTGCATGCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 1021 TATGTGTCTGAACTGGCTGCTGAATGTTATGATACGGGACGAACAGGGAGGATCCGTGT 1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGAATTTTGTGACCAGCGCAGGCTGGGCCT 1108 caaccicaadaaaaadaccadccaiddaiaiccidcadairariaaiidiridaccac TATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301 cagraacarreagccaagrercegagcrecrrccaarrig 4508 1261 841 1081 901 961 781

4, 2004, 18:20:19 Search completed: April Job time: 338.709 secs

```
April 4, 2004, 12:04:07; Search time 3391.8 Seconds (without alignments) 16625.161 Million cell updates/sec
                                                                                                                                                                  US-09-845-416-10_COPY_1800_3100
1301
1 cgactttccagcagttcaga.......ccggagctgcttccaatttg 1301
                                                                                                                                                                                                                                                                                                                        6940544
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                      3470272 seqs, 21671516995 residues
                                                                                                                                                                                                                                                                                                                      otal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                 M nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                       IDENTITY NUC Gapop 10.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                htgo_mus:*
htgo_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_ro:*
em_sts:*
em_un:*
em_vi:*
em_to:hum:*
em_htg_hum:*
em_htg_num:*
em_htg_nus:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
em_htg_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         htgo_hum:*
                                                                                                                                                                                                                                                                                                                                                           finimum DB seg length: 0 taximum DB seg length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_pat:*
em_ph:*
em_pl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_mu:*
                                                                                                                                                                        litle:
Perfect score:
Sequence:
                                                                                                                                                                                                                                     coring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                )atabase :
                                                                                                                                                                                                                                                                                          earched:
                                                                                                        :uo un;
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	AX538620 Sequence AX538621 Sequence AX304538 Sequence AX114289 Sequence AX538622 Sequence AX538624 Sequence AX538627 Sequence	X1429B Human mRNA AX409617 Sequence AX538581 Sequence AX538581 Sequence AR220819 Sequence AF070485 Canis fam AX306153 Sequence AX538582 Sequence AX538582 Sequence AX538582 Sequence	AR093392 Sequence AR142592 Sequence E30219 Shortened d AX538619 Sequence X13369 Chicken mRN E30220 Shortened d E30221 Shortened d E30221 Shortened d M37645 Torpedo cal E30223 Shortened d M37645 Torpedo cal E3023 Shortened d M37645 Torpedo cal M37645 Torpedo cal E3023 Shortened d M37645 Torpedo cal E3023 Shortened d	AX817318 Sequence AX817316 Sequence AX817316 Sequence AJ002967 Rattus no X83506 M. musculus AX538584 Sequence Y12229 M. musculus A63605 Sequence AX281228 Sequence AX281228 Sequence AX538583 Sequence AX538583 Sequence AX538593 Sequence AX538593 Sequence AX538593 Sequence X69086 H. sapiens m A63607 Sequence X69087 Sequence X69087 Sequence X69087 Sequence AX538593 Sequence AX538593 Sequence AR5319 Human dystr AX552248 Sequence	DNA linear PAT 23-NOV-2002 peptide sequences MICHIGAN (TRS)
SOUTHWANTES	on i		0		B BC028720 6 AX817318 6 AX817318 10 RNAJ2967 10 RNAJ2967 10 MMYUTRPH 6 AX38584 10 MMY12229 6 AX38583 6 AX381528 6 AX381528 6 AX381529 6 AX381529 6 AX381529 6 AX381529 6 AX381529 6 AX381788 10 AX193519	ALIGNMENT 5339 bp cent W00229056 1166 3. Harper, S.O. leic acid and A 40 11-APR-24 harver or 11-APR-24
d	Query Match I	100.0 5339 100.0 5462 100.0 5952 100.0 5952 100.0 11443	00000000000000000000000000000000000000	8 8 8 8 7 0 0 0 0 0 0 0 0 0 4 4 7 7 7 8 8 8 7 7 7 8 8 4 8 7 7 7 9 9 4 8 7 7 7 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	444.9 444.9 444.6 443.8 443.8 443.8 10705 442.6 60059 442.6 103302 442.6 103302 442.6 10330 442.9 442.	88620 88620.1 GI:25 88620.1 GI:25 hetic constru- licial sequen ficial sequen recrain, J.S. 1-dystrophin n
	Result No. Score) 	7777	ਜਜ਼ਰੂਰ	29 29 30 30 30 30 30 30 30 30 30 30 30 30 30	RESULT 1 AX538620 LOCUS LOCUS DEFINITION SEQUACESION KEYWORDS SOURCE SYNT SOURCE SYNT KEYWORDS SOURCE SYNT AX5. THILE MINITIES THILE MINITIES THILE THILE THILE MINITIES THILE THIL

Db 2893 CAACCTCAAGCAAATGACCAGCCATGGATATCTTGATATTTAATTGATCACCAC 2952 Qy 561 TATTTATGACCGCCTGGAGCAACAAATTGTTAGTTTAATTGTTACCACCACCACCACACATTATTAATTGTTAGACCACCACAACAACAACACACAC	AMESSUL 2
FEATURES 1. 5339 / Organism="synthetic construct" / Mol_type="unassigned DNA" / Molton DNA	241 AAAATTGAAACTTCGGTGACTGGCGAAAAAATAGATGAGACCTTGAAAGACT 300 2233 AAAATTGAAACTTCGACTCGGTGACTGGCGAAAAATAGATGAGACCCTTGAAAGACT 222 00 CCAGGAACTTCAAGGGCCACGGATGAGCTGAACTTCAAGTGGCCCAAGTTGAGTGAT 325 229 CCAGGAACTTCAAGGGCCACGGATGAGCTGAACTTCAAGTTGAGTGAG

ਨ 원

ਨੇ ď \$ 8

Ä g à

8 2 8

2 4 2 4 2

q

8 %

δ Q

9 중 음

13.04538 13.04538 13.04538 13.04538 13.04538 13.04538 13.04538 13.04538 13.04538 14.04538 15.04538 15.04538 16.0588 16.0588 16.0588 16.0588 17.0588 18.0588	Qy GCAGCTGATGAAGCCACAGGAACTTTGGTCCAGCATCTTCCAGCGCC 660
10 CAGGAMATTCAMAGGGCCCCGGGTGGCCCCAGGAGAMAMATAGATGGAGCCCTGGAAGGCCCAGGAGGCCCAGGAGCCCAGGGCCCAGGCCCAGGCCCAGGCCCAGGCCCAGGCCCAGCCCAGGCCCCCAGGCCCCCC	CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGGGGAAGTTGCATCCTTTGGGGG CAGTAACATTGAGCCAACTGCTTCCAATTTG 1301 CAGTAACATTGAGCCAAGTGCTCCGGAGCTGCTTCCAATTTG 1301 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 3416

ζĊ

පු

දි දි

8 6 6 6

721 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 780

ò

RESULT 3 AR304538

\$ g

Page 4

	181 3582 241	3642 301 3702	361	DB 3822 GAAAGICAAGGCACIICGAGGAAAAIIGGGCCIICIGAAAGAGAGGGCACGGCAAA 5831 Qy 481 TGACCTTGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 540 DB 3882 TGACCTTGGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 3941	Qy 541 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTCGCCGTCGAGGACCAGACCAG 600 3942 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCAGATCAG 4001	OY 601 GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCTTT	4 4	QY 781 TGACCTGAATAATGTCAGATTCTCAGCTTATAGACTGCCATGAAACTCCGAAGACTGCA 840	OY 841 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 900	OY 901 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGACCAC 960	Qy 961 TAITTATGACGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGGGTGGA 1020	OY 1021 TAIGTGTCTGAACTGGTGGTGTTTATGATACGGGACGACGAGGAGGATCCGTGT 1080	Qy 1081 CCTGTCTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 1140
Db 4122 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 4181 Qy 781 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 840 bb 4182 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 4241 Qy 841 GAAGGCCCTTTGCTTGAATCTCTGAGCTGTCAGCTGCATGTGAACTTCGACCAGCA 900 4242 GAAGGCCCTTTGCTTGGATCTCTTGAGCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 4301	Oy 901 CAACCTCAAGCAAATGACCAGGCCATGGATATCTGATTATTATTGTTTGACCAC 960 4302 [AIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Db 4362 TAITTAIGACCGCTIGGAGCACAAGAGCACAATTIGGTCAAGGTCCTTCTGCGTGGA 4421 Qy 1021 TAIGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 1080 Db 4422 TAIGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 4481	OY 1081 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 1140 \$\text{ph} \text{4482} \text{CTTTTTAAAACTGGCATCATTTGCTGTAAAGCACATTTGGTACAGTACAG 4541} \$\text{ph} \text{ph} \text{ph} \text{ph} \text{ph} \text{ph} \text{ph} \text{ph} \text{ph}	OY 1201 CCTTCTGCATGATTCTATCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260	OY 1261 CAGTAACATTGAGCCAAGTGCCTGCTTCCAATTG 1301	RESULT 4 AX114289 LOCUS LOCUS SPETUITION Sequence 1 from Patent W00129243.			a s	ರ 1		5952 ;	; Conservative CGACTTTCCAGCAGTTCAC

S

ညှ ⋩ ă બ્ર ≿ ŏ

⋩

```
4407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1140
                                                                                            4047
                                                                                                                                                     4107
                                                                                                                                                                                                               4167
                                                                                                                                                                                                                                                                      4227
                                                                                                                                                                                                                                                                                                                                 4287
                                                                                                                                                                                                                                                                                                                                                                                         4347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT 23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                       096
                                                                                                                         99
                                                                                                                                                                                 720
                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                           900
         540
                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                        961 TATTTATGACCGCCTGGAGCAAAGACACAAATTTGGTCAACGTCCCTCTCCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              congrentitaaaciggcarcarriccorgigiaaagcacarriggaagacaadaacag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATACCTITICAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATGGGGG
                                                                                                                                                                                                                                                                                                                      TATTIATGACCGCCTGGAGCAAGAGCACAATTIGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAACCTCAAGCAAAATGACCAGCCCATGGATAATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
       TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                  3928 reaccirecteeceaecriaceacrireeecarreaecreteaeceraraaccieaecae
                                                                                                                         GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGCACTTTCCTTTCCACGTC
                                                                                                                                                                                 TGTCCAGGGTCCCTGGGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCA
                                                                                                                                                                                                                                           CGAGACTCAAACTAGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGG
                                                                                                                                                                                                                                                                                                   TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                              GAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                 TCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 44 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cagraacarreagccaagrercegaagcrecrrecaarrre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AX538624 11443 bp
Sequence 44 from Patent WO0229056.
AX538624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AX538624.1 GI:25271175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         synthetic construct
synthetic construct
artificial sequences.
                                                                                                                                                                                                                  4108 '
                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4708
                                                                                                3988
                                                                                                                                                        4048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4408
                                                                                                                                                                                                                                                                            4168
                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         446B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4528
                                                                                                                            601
                                                                      541
                                                                                                                                                                                      661
                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
AX538624
LOCUS
DEFINITION
ACCESSION
VERSION
VERSION
CETWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                            8 B
                                                                                                                                                                                                                                      8 8
                                                                                                                                                                                                                                                                                                                         ያ ያ
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ठे
                                  g
                                                                                                                                                 음 상 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3448 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA 3507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8628 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 3687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAAATAGATGAGACCCTTGAAAGACT 3747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGA 3867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                 23-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGGAACTICAAGAGGCCACGGAIGAGCIGGACCICAAGCIGCGCCAAGCIGAGGIGAI 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGGGATCCTGGCAGCCGTGGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAAAAATAGATGAGACCCTTGAAAGACT 300
                                                                                     CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                   4602 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                         4542 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0
                                                                                                                                                                                                                                                 PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6; Length 8689;
                                                                                                                                                                                                                                                                                                                                                                      1
Chamberlain, J. S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056-A 42 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                 linear
                                                                                                                                            CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                4662 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 4702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="synthetic construct"
/mol_type="unassigned DNA"
/mol_type="unassigned"
/noTe="Synthetic"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
100.0%; Score 1301;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                 AX538622
Sequence 42 from Patent
AX538622
AX538622.1 GI:25271171
                                                                                                                                                                                                                                                                                                                       synthetic construct
synthetic construct
artificial sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        r-t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3868
                               1141
                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                     RESULT 5
VAS38622
LOCUS
DEFINITION
ACCESSION
VERSION
CEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
```

ORIGIN

g ਨੇ

ਨੇ g ò g q

2

a

 $\stackrel{\sim}{\alpha}$

중 음

දු පු

à

	RESULT 7 AX538627 LOCUS DEFINITION Sequence 47 from Patent W00229056. AX538627 AX53867 A
FEATURES	6 6 8 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

g

ል

g

\$ 8

5

\$2 90 \$3 Q

Ζ Σ	AUTHORS Rosenthal, A. IITLE Direct Submission JOURNAL Submitted (09-FEB-1989) Rosenthal A., Akademie der Wissenschaften JOURNAL Submitted (09-FEB-1989) Rosenthal A., Akademie der Wissenschaften der DDr, Zentralinstitut fuer Molekularbiologie, Robert-Roessle Str.10, 115 Berlin Buch, DDR COMMENT See also M18533 and M20150 for Dmd seqs.; discrepancies compared to M18533 cDNA were located at x14298 pos. 496, 1772, 1965, 2449, M18533 cDNA were located at x14298 pos. 496, 1772, 1965, 2449, ASST 4229, 4504, 5075, 5332, 5630 and 7194. FEATURES L.12446 /organism="Homo sapiens" /db_xref="texton:9606" /db_xref="texton:9606" /chromosome="X chromosoma", Xp21."	/tissue_type="muscle" /dev_efage="fetal and adult." /dev_efage="fetal and adult." /goodon_start="	DITYPDRKSILMYTIGLEOVILEQUYSIEAIGBYEMLERFERYTKEEHFOLHHOWHYSO QITYSLAQGYERTSEPRREFRSTATATAGAYVTTSDFTRSFFESCHLEAPEDKEFGSSL MESENVILDRYOTALEEYLSWILSAEDTIGAGGEISNOVEVKOGFHTHEGYMMDILTAH QGRVGNILQLGSKLIGTGKLSEDEETEVQBOWNLLNSRWECLRVASWEKGSNIHRVLM DLQNOKKREKLINDHTTKTEERTRKWEBEPLGPDJEDLKROVOGHKULGDELGEGOKRVN SLTHWYVVVDESSGDHATAALEEQLKVLGDRWANICHWTEGDLEGEGVRVN ETYTTYTTREETRYKREADENETREKONEMLSSLQKLAVLKADLEKKKOSMGKLYSIK ODLLSTLKNKSYTQKTEAMLDNFARCHDNLVQKLEKSTAOISGAVTTTOPSLITQTTVM ETYTTYTTREGILLVKAAAQEELPPPPSCHKORTTYDSELRKRLDVDITELHSWITRSEA VLQSPEFAIFRKEGNFSDLKRKYNAIREREKRAKFRKNLDVDITELHSWITRSEA DSIKQAGEQLNSRWIBPCQLLSERLNWILBYQNNIIAFYNQLQQLEQMTTTAENWILKIQ PTTPSEPTAIRSCHATKSCHATCHORTNANIIAFYNQLOGLEGWTTTAENWILKIQ	EIMERORIGELORIANIA SELOSSIOLEGOSILI VILGITUSERI SELOSSISTOSEFEE IEGRWIK EIMERORIGELORIANIA SELOSSIOLEGOSILI VILGITARIA SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SELOSSISTICASE SEROPEROPAGORIA SELOSSISTICASE SEROPERO SELOSSISTICASE SEROPERO SELOSSISTICASE SEROPERO SELOSSISTICASE SELOSSIST
		9436 CGAGGACTCAAACAACTTGCTGGGAACCATCCCAAAATGACGACTCTAACAGGTCTTTAGC 9495 781 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCATGAAACTCCGAAGACTCCTTAAGC 9495 9496 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 9555 841 GAAGGCCTTTGCTTGGATCTCTGAGCCTGTGCATGTGATGCCTTGGACCAGCA 900 9556 GAAGGCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 911 9556 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 9615 9616 CAACCTCAAGCAAAATGACCAGCCCATGGATACCTGCAGATTATTAATTGTTTGACCAC 960 9616 CAACCTCAAAGCAAGCAACCAATGATAACTGTTTTAATTGTTTTAATTGTTTTAATTGTTTTAATTGTTTTAAATTGTTTTAAATTGTTTTAAATTGTTTTAAATTGTTTTAAATTGTTTTAATTGTTTAATTGTTTTAATTGTTTTAATTGTTTTAATTGTTTTAATTGTTTTAATTGTTTTAATTGTTTAATTGTTTAATTGTTTTAATTGTTAATTGTTTAATTGTTTAATTAATTGTTTAATTGTTTAATTGTTTAATTGTTTAATTGTTTAATTGTTTAATTGTTTAATTGTTTAATTGTTAATTGTTAATTGTTTAATTGTTAATTAATTGTTTAATTGTTAATTAATTGTTAATTGTTAATTAATTAATTAATTGTTAATGTTAA	TATTTATGACCGCCTGGAGCACACAACTTGGTCAACGTCCCTCTCTGGTGGATTTATGATCCACGTCCCTCTCTGGTGGATTTATGATCCACGTCCCTCTCTGGTGGATTTATGATCAACGTCCCTCTCTGGTGGATTTATGATCACGCCCTCCTCTGGTGGATTTATGATCTGTTCTGAACGTCCCTCTTGGAACGTCCGTGTTATGATACGGGACGAACAGGAACAGGAACGGAACGGAACGGAACGGAACGAACAGGAACGAACAAGAACAAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAGAACAAACAAC	1141 ATACCTTTCAAGCAAGTTCAACAGGATTTGTGACCAGGGCGGGGCCT 1200 9856 ATACCTTTCAAGCAAGTGCCAAGTTCAACAGGATTTTGTGACCAGGGCGGGC

e e 8 % 8 %

දු පු

ò

q

ò

40 you

×

☆ 월

RESULT 8 HSDMDR

Dp

ò

à

8 8 8

ASLERENDERXIKELIDRIANALMANIALIS SANGWAYANGA LIKAGULILANALDIA KALIA TA KORLILA KALIA KARIA KALIA KARIA KSEBIKIKQQLLQTKHNALKDLRSQRRKKALEISHQWYQYKRQADDLLKCLDDIEKKI

8725 8785 8905 9025 9145 ö 8606 cgactiriccagcagricagaagcagaacgargracaragggccricaagaggggaarrgaa 8665 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGGGGGTCAATACTGAGTGGGA 8845 240 300 420 480 120 GCCTTTGGAAGGACTAGAGAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360 8846 AAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAAACACT 8666 AACTAAAGAACCIGIFATCATGAGIACTCTTGAGACTGTACGAATATTTCTGACAGAGCA 8906 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGTGAT 8966 CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACTCGA GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC 9086 IGACCTIGCICGCCAGCITACCACTITGGGCATICAGCICTCACCGTATAACCTCAGCAC AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA GCCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGAGAG AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA AAAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACT CAAGGGATCCTGGCAGCCCGTGGGCGATCTCTCTCATTGACTCTCTCCAAGATCACCTCGA 1 CGACTITCCAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA 100.0%; Score 1301; DB 9; Length 12446; 100.0%; Pred. No. 0; Close 0; Mismatches 0; Indels 0; Conservative Best Local Similarity Matches 1301; Conser 181 8786 121 8726 241 301 361 481 61 421 Query Match ORIGIN

g ò g ઠ 임

. yo	541 TCTGGAAGACTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG 600
'n	601 GCACCTGCATGAACCCCCACAGGACTTTGGTCCAGCATCTCCAGCACTTTCTTT
qa	
ò	661 TGTCCAGGGTCCCTGGGAGAGACCATCTCGCCAAACAAGTGCCCTACTATATCAACA 720
අු	66 IGTCCAGGGTCCCTGGGAAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACA 93
λ 6	721 CGAGACTCAAACAACTIGGTGGGACCATCCCAAAATGACAGGTCTACCAGCTTTAGC 780 9326 [H
. vo	781
qq	9386 IGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA 9445
δ	841 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 900
qq	υ υ
δλ Dp	901 CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960
δλ	961 TATTTATGACCGCTGGAGCACAACAATTTGGTCAACGTCCCTCTGCGGA 1020
q	9566 TATTTATGACCGCCTGGAGCAAGAGCACAACTATTGGTCAACGTCCCTCTCTGCGTGGA 9625
δ	08
g	9626 TATGTGTGTGTAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 9685
ò	CCIGICITITIAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 114
QQ	974
ζ	1141 ATACCITITCAAGCAAGTGGCAAGTICAACAGGATITTGTGACCAGGGCGGCGCGCCT 1200
qq	9746 ATACCTITICAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGGGGGCTGGGCCCT 9805
ò	9
qq	9806 ccircidcardairciaiccaaarirccaadacadridgergaagrigcarcciriggege 9865
λō	261 CAGTAACATTGAGGCAAGTGTCCGGAGCTGCTTCCAATTG 130
du	AAGTGTCCGGAGCTGCTTC
RESULT 9 AX409637 LOCUS DETINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISN REFERENCE AUTHORS TITLE JOURNAL FEATURES	AX409637 Sequence 2284 from Patent W00229103. N AX409637 AX409637 AX409637.1 GI:21442342 Home sapiens (human) Home sapiens (human) SM Home sapiens (human) Home sapiens (human) AX409637.1 Gi:21442342 Home sapiens (human) SM Home sapiens (human) A Marayota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Home. B Alvares, C., Horne, D., Peres-da-Silva, S. and Vockley, J.G. Gene expression profiles in liver cancer L Patent: W0 0229103-A 2284 11-APR-2002; GENE LOGIC INC (US) 1. 13957 /organism="Home sapiens"

à d 8 В ò g ŏ g $\dot{\delta}$ 엄 ò TATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTGCGTGGA 1020

1200

PAT 23-NOV-2002

```
9796 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 9855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8896 AGCCCAGAATGTCACTCCTACCAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 8955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 AACTAAAGAACCIGIAATCAIGAGIACTCTIGAGACIGIACGAATAITICIGACAGAGCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                        121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGAGCCCAGAGAGCTGCCTCCTGAGGAGAG
                       9676 TATTTATGACCGCCTGGAGCAAGAACAACAATTTGGTCAACGTCCCTCTCTGGGTGGA
                                                                   1021 TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                    1081 CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                   1141 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                      9856 ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCCT
                                                                                                                                                                                                                                                                        1201. CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG
                                                                                                                                                                                                                                                                                              9916 CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8716 CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8776 AACTAAAGAACCTGTAATCATGAGTACTTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGACTTTCCAGCAGTTCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 6; Length 13957;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chamberlain, J.S. and Harper, S.Q.

Chamberlain, J.S. and Harper, S.Q.

Mini-dystrophin mucleic acid and peptide sequences

Datent: WO 0229056-A 1 11-APR-2002;

THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)

Location/Qualifiers

1. 13957

/organism="Homo sapiens"
/mol_type="unassigned DNA"
/db_xref="taxon:9666"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
                                                                                                                                                                                                                                                                                                                                                                          9976 cagraacarreaeccaaererecesaecrecriceaarrie 10016
                                                                                                                                                                                                                                                                                                                                         1261 CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 1301;
100.0%; Pred. No. 0;
iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX538581 13957 bp
Sequence 1 from Patent W00229056.
AX538581 GI:25271086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 100.
Matches 1301; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
AX538581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                             යු
                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            요
                       g
                                                           6 G
                                                                                                                         ð
                                                                                                                                                               D.
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \stackrel{>}{\sim}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9135
                                                                                                                                                                                                                                                                                                                         8895
                                                                                                                                                                                                                                                                                                                                                                                          8955
                                                                                                                                                                                                                                                                                                                                                                                                                                                             9015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 9675
                                                                                                                                                                                     ceactrirceaccacrircacaagcacacarciacaracaracaccrircaacaccaaricaa 8775
                                                                                                                     ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                         <u> AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA</u>
                                                                                                                                                                                                                                                      AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                          eccriricanagaacradagaacrcraccagaaccccagagaccraccrcraagagag
                                                                                                                                                                                                                                                                                                                                                                                          AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                             AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCTTGAAAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAAGTCAAGGCACTTCGAGGAGAATTGCGCCTCTGAAAGAGAAGACGTGAGCCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCCACGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541 TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGGAAGACCTGAACACCCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9496 TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGGGATCCTGGCAGCCCGTGGCGATCTCCTCATTGACTCTCCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caadddattccrddcadcccdrddcdattcrccrcarridacrcrccaadarcaccrcda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGCTGCATGAAGCCCACAGGGACTTTGGTCCAGCATCTCAGGACTTTCCACGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAGGCCCTTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                      CGACTITICCAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                                                                                                                                                                          181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                   0; Gaps
                                                                                     DB 6; Length 13957;
/mol_type="unassigned DNA"
/db_xref="taxon:9606"
/note="EMBL/GenBank Accession No. M18533"
                                                                                                                   Indels
                                                                                                                   ö
                                                                                     Query Match

100.0%; Score 1301;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1301; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                               8956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9376
                                                                                                                                                                                        8716
                                                                                                                                                                                                                                                           8776
                                                                                                                                                                                                                                                                                                                             8836
                                                                                                                                                                                                                                                                                                                                                                                              8896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9556
                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                        ò
                                                                                                                                                                                     임
                                                                                                                                                                                                                       \dot{\delta}
                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               \dot{\varsigma}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

8775

ô

Gaps

ô

8835

180

and

GI:181856

```
On May 25, 2000 this sequence version replaced gi:340693.
Draft entry and computer-readable sequence kindly provided by M.Koenig, 01-APR-1988 The severity of muscular dystrophy is determined by the size of the deleted DNA segment. Deletions found in different patients were from positions 302-2200, 473-1168, 1691-1810, and 1169-3011.
                                                                                                                                                                                                                                                                                                 Hoffman, E.P., Monaco, A.P., Feener, C.C. and Kunkel, L.M. Conservation of the Duchenne muscular dystrophy gene in mice and
                                                                                                             Koenig_M., Hoffman, B. P., Bertelson, C.J., Monaco, A.P., Feener, C. Kunkel, L.M.
Complete cloning of the Duchenne muscular dystrophy (DMD) cDNA a preliminary genomic organization of the DMD gene in normal and affected individuals
Cell 50 (3), 509-517 (1987)
                                                                                                                                                                                                                                                                                                                                                                            3 (bases 1 to 13957)
Koenig,M., Monaco,A.P. and Kunkel,L.M.
The complete sequence of dystrophin predicts a rod-shaped cytoskeletal protein
Cell S3 (2), 219-226 (1988)
                                                                       Eukaryoča, Metazoa, Chordata, Craniata, Vertebrata, Butele
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1 (bases 1 to 1699)
                                                                                                                                                                                                                                                                                                                                                        Science 238 (4825), 347-350 (1987)
                                                                                                                                                                                                                                                                             2 (bases 1678 to 3830)
Hoffman, E.P., Monaco, A.
                                 Homo sapiens (human)
   M18533.1
                                                                                                                                                                                                                                                                 607877
                                                                                                                                                                                                                                                                                                                                          humans
               KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE
PUBMED
COMMENT
                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                             REFERENCE
                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                    9315
                     9075
                                                                                                                                                                                                                                             9255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9915
                                                                                                                                                                   9136 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA 9195
                                                                                                                                                                                                                                                                                                                                                                                            9316 deaderacardaadeceacadaddacrrrrddreddearcreddearcrrrerrrecaedre 9375
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCCAGGGTCCCTGGGAAGAGAGCCATCTCGCCAAACAAGTGCCCTACTATATCAACCA 9435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGGCCCTTTGCTTGGATCTTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA 9615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAACCTCAAGGCAAAATGACCAGCCCATGGATATCTGCAGATTATTAATTGTTTGACCAC 9675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTIATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTCTGCGTGGA 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT 9795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG 9855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCT 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGGTGAAGTTGCATCCTTTGGGGG 9975
                                                                                                                                 480
                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                   009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                         420
                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC 960
CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                   TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                   TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                reregaagacergaacaccagaregaagerrerecagaregeceregagacegaereag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGCCACGTCAA
                                                                                                                                                                                                       TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9676 TATTTATGACCGCCTGGAGCAAGAACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGGAGGCTGGGCCT
                                                         CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCTCTTGACTCTCCAAGATCACCTCGA
                                                                                         caaggarccrggcagcccgrgggggrcrcrcarrgacrcrcrcaagarcaccrca
                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 10016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9856
                     9016
                                                         361
                                                                                           9036
                                                                                                                                 421
                                                                                                                                                                                                                                             9136
                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                      9256
                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9266
                                                                                                                                                                                                           481
                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                         ઠ
                                                                                                                                 ò
                                                                                                                                                                 임
                                                                                                                                                                                                         à
                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
```

1. .13957 /organism="Homo sapiens" /mol_type="mRNN" /db zref="taxon:966" /chromosome="X" /map="xx21.3-p21.1" /fisue_type="muscle" /dev stage="fetus" /note="400-119-850"

Location/Qualifiers

DSIKQASEQLNSRWIEFCQLLSERLNWLEYQNNIIAFYNQLQQLEQWTTTAENWLKIQ PTTPSEPTAIKSQLKICKDEVNRLSGLQPQIERLKIQSIALKEKGQEPNFLDADFVAF TNHRKQYOFBOVQAREKELQTIFDTLPPMRYQETMSAIRTWVQQSETKLSIFQLSVTDV EINEQRLGELQALQSQQGGCTTYVKEMSKKAFSEISRKYQSEFEEIEGRWK KLGSQLVBHCQKLLGSLQNNIQTLKKWMARVDVFLKEBWPALGDSEILKKQL KQCRLLVSDIQTIQPSLNSVNBGGQKIKNBAEPEFASRLFTELKELNTQWDHMCQQVY QDLLSTLKNKSVTQKTEAWLDNFARCWDNLVQKLEKSTAQI SQAVTTTQPSLTQTTVM ETVTTVTTREQILVKHAQEELPPPPQKKRQITVDSEIRKRLDVDITELHSWITRSEA VLQSPEFAIFRKEGNFSDLKEKVNAIEREKAEKFRKLQDASRSAQALVEQWVNEGVNA 1. .13957 /gene="DMD" 209. .11266 /gene="DMD"

PRI 25-MAY-2000

HUMDYS 13957 bp mRNA linear Homo sapiens dystrophin (DMD) mRNA, complete cds. M18533 M17154 M18026 M20250

LOCUS DEFINITION ACCESSION RESULT 11 HUMDYS

BEAQOXEAAVYALLITEAYLASANKWILNEVERLATTITYONG-CTRINORCKTILE
BUWACWHELLSYLEXANKWILNEVERLATTENNI PGGAEEI SBYLDSLENLKWEKSEDDR
NOIRILOSSLITEDKOLAAYLADKVDAAPPYQEALKKELETTITYYOW-CTRINORCKTILE
BUWACWHELLSYLEXANKWILNEVERLATTENNI PGGAEEI SBYLDSLENLKWEKSEDDR
NOIRILOSSLITEDKOLAAYLADKVDAAPPYQEALKKELETTITYYOW-CTRINORCKTILE
BUYACKACOLONCKALODVSKKERLEOKPAEELELOSSKATLDEVKCHLPALETKSYB
QBVUOSOLINHCVNLYKSLSKYCKESUBWY TYTGROI VOKKOTENPKELDERVTALKILH
NBLGAKYTEKQOLOKKLASRKWRRENNYLTBWILAATDMELTKRSYBGMEBNIDSE
NAMGATQKEIERQKYHLKSITWYINGROIVOKKYTENPKELDBRYTALKILH
NBLGAKYTEKQOLOKKLASRKWRRENNYLTBWILAATDMELTKRSYBGMEBNIDSE
BWLNILLEYQKHRETPDQUADHITWYINGROINGKATOWERCHOPALLASWWIADTAYTSAE
BWLNILLEYQKHRETPDQUADHITWYINGHCKKLYEBOLESBKKKPOOKEDDLIKKLDDIEKCLDDIEKKL
RRBEIKTKOQLIGTKHYALKDISSORKKALAEISHOWYOYKRQADDLIKKLDDIEKCLDDIEKKL
ASLEEPENDEKKIKEIDREJCKKKEELNAVRRQAEGLSEDGAAMAVEPTOIOLIKKWELDIE
ILNAPOLOKOTENDOAANLAANROHKSORRKKRESHYSOKKRELOGESTRING
ASLEEPENDEKKIKEIDREJCKKKEELRAVRRQAEGLSEDGAAMAVEPTOIOLIKKWEL
ASLEEPENDEKKIKEIDREJCKKKEELRAVRRQAEGLSEDGAAMAVEPTOIOLIKKWE
ASLEEPENDEKKIKEIDREGKKILSEROKKIKENSTYKELDIGSKTUMI
ASLEEPENDEKKIKEIDREGKKILSEROKOLIKSEVANROHKELDIGSKRYNE
ASLEEPENDEKKIKEIDREGKKILSEROKOLIKSEVANROHKELDIGSKRYNE
ASLEEPENDEKKIKEIDREGKKILSEROKOLIKSEVANROHKELDIGSKRYNE
ILNAPOLAKOROKOPOREVUENTONYONTULIABANDIATAORATORIKK
OEALSOLDFOWEKVIKOROKORPOREVUENTONYONTULIANITYORIOTORIKKA
KROEVKLINTESLIDROHTSTORININGRATORIKALDOSSKTIDASILOSKUK
KROONTUNINGRANGORINTENNINGRADORIADENNINGRADEN
KROONTUNINGRANGORILYKKAPORINGROONTONYONNULALIOPINAKALLOSKUK
KROONTULOSKATORIKKAOONTONORIOLIALINYONNULBENDURALUT
BLICKURADYATTITARIKOABENDURALIKKEPUNARIATORIADENNINGRADENDURALUT
BLICKURANTITANINASWRSIHKKYOSEREAALEETHRILDOPINULKINOYONULANDIADENTUL
BLICKURANTITANINASWRSIHKKYOSEREAALEETHRILDOPINULKINOYONULANDIADENTUL
BLICKURANTINONNURRANSIHKKOONDULANDIANORYOULULON NOILULUNYONULANDIADENTULON NOILULUNYONULANDIANORYOULULON NOILULUNYONULANDIANORYOULULON NOILULUNYONULANDIANORYOULULON NOILULUNYONULANDIANORYOULULON NOILULUNYONULANDIANORYOULULUN NONINULUNYONULANDIANORYOULUNYONULULUNYONULULUNYON VWLPVLHRVAAAETAKHQAKCNICKECPIIGFRYBSLKHFNYDICQSCFFSGRVAKGH
HWTPYWCYCTPTTSGEDVRDFAXVLKRFRYRFYRFAAHFRWGYLPVQTULGONET
PVTLINFWPVDSABASSPQLSHDDTHSRILBERTASRLAEMENSNGSYLMDSISPNESID
DEHLLIQHYCGSLNODSPLSQPRSPAQILISLESEERGELERILADLEEENRALQABY
DRALKQQHERHKGLSPLBSPPERMYTSGOPRDAELIABAKLLAOHKGRLEARNQILEDH
NRQLESQLHTLRQLLEDPQABAKVNGTTVSSPSTSLQRSDSSQPMLLRVVGSQTSDSM
GEEDLLSPPQDTSTGLEEVMEQLNNSFPSSRGRNTPGKPRREDTM" arkealkgglektvslokdlsemhewmtqaeeeylerdfeyktpdelokaveemkrak

8836 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 8895 8896 AGCCCAGAAIGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 8955 CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAT 9075 CCAGGAACTICAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT 360 61 AACTAAAGAACCTGTAATCATGAGTACTTTGAGACTGTACGAATATTTCTGACAGAGCA 120 121 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAG 180 181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA 240 241 AAAATTGAACCTGCACTCCGCTGACTGGCAGAAAAATAGATGAGACCCTTGAAAGACT 300 1 CGACTITCCAGCAGITCAGAAGCAGAACGAIGTACAIAGGGCCTICAAGAGGGGAATIGAA 60 0; Indels 0; Gaps Query Match
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches 0; Indels 0; 301 NIGINC

පු

ਨੇ Q D $\stackrel{>}{\circ}$

ਨ੍ਹ

g à g à

QQ QQ QQ <
--

```
GAAGGCCCTTTGCTTGGATCTCT
                                                                                                                                                                                                                    1141
                                                              9616
                                                                                                        9676
                                                                                                                             1021
                                                                                                                                                                       1081
                                                                                                                                                                                             9626
                                                                                                                                                                                                                                       9826
                                                                                                                                                                                                                                                              1200
                                                                                                                                                                                                                                                                                   9166
841
                                         901
                                                                                    961
                                                                                                                                                   9736
                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5'UTR
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                        AF070485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                       S
                                                                                                 ద
                                                                                                                             ठ
                                                                                                                                                셤
                                                                                                                                                                                         유
                                                                                                                                                                                                                  \delta
                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                            셤
                                8
                                                                                à
                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                        8775
                                                                                                                                                                                                                                                  8835
                                                                                                                                                                                                                                                                                                                                         8955
                                                                                                                                                                                                                                                                                                                                                                                   9015
                                                                                                                                                                                                                                                                                                                                                                                                                             9075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9555
                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGACCTGAATAATGTCAGATTCTCAGCTTATAAGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                   1 CGACTITICCAGCAGTICAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAA
                                                                                                                                                                                                        AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                  8776 AACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCA
                                                                                                                                                                                                                                                                                             8836 GCCTTTGGAAGGACTAGAGAAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGA
                                                                                                                                                                                                                                                                                                                    181 AGCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGA
                                                                                                                                                                                                                                                                                                                                   CCAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCAAGCTGCGCCAAGCTGAGGTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       caagggarccreecagcccgreegccarcrecreargacrerccaagarcacreea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAACGTGAGGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9136 GAAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAACGTGAGCCACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9196 TGACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rerecadesrecerdesasasecareresecaacaaasaseceraerarareaaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCA
                                                                                                                                                                                                                                                                                                                                                                                 CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGC
                                                                                                                                                               Gaps
                                                                                                                                                              .;
H
                                                                                                                                         Length 13977;
                                                                                                                                                              Indels
                                                                                                                                                              ;
0
                                                                                                                                         DB 6;
               Unidensitied.

1 (Dases 1 to 13977)

Jones, K.A., Volkmuth, W. and Walker, M.G.
Bone remodeling genes
Patent: US 6426186-A 60 30-JUL-2002;

Location/Qualifiers
                                                                                                                                      Query Match

99.2%; Score 1290; Di
Best Local Similarity 99.9%; Pred. No. 0;
Matches 1301; Conservative 0; Mismatches
                                                                                1. .13977
/organism="unknown"
/mol_type="genomic DNA"
 Unknown
                                                                                                                                                                                                         8716
                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                         9688
                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                   8956
                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                             9016
                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
SOURCE.
ORGANISM
                              REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                   ORIGIN
                                                                                                                                                                                    ઠે
                                                                                                                                                                                                        셤
                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                            쉱
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                        \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
```

```
9795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QITVSIAQGYERAPSFPKPREŠŤAYTQAAŤVTTSDPTRSPLPSQHIETPEDÖKSFGRS
HTGTERNILOSYQTALBEVLENILSABEALQAGGEISNDVEBEYEZGFHTHGTYMDLTS
HTGTERANLOLGSOLI GTGTKI.SEDBETTSORGMULINSRWECI.RVASNEKGSNIHKVL
MDLQNQQLKEI.NDWILTKTEERTRKMEKEPLGPDIEDIKRQVQQHKVLQEDLEQEQVRV
NESTRHWVVVDESSGOHATALLEDGLKKTGORGANICKRWIEDRWJLLGDJDILLKKWRFT
BEGCLFSAWLSEKEBANKHTTGFKDQSFYLSNIQKLAVLKTDLEKKKGYNMKLCSI
NQDLLSALKNIVVAHKMEAMLDNFAQRMDNIVQKLEKSSAQISQAVTTTQPSLTV
9556 GAAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCTTTGGACCAGCA 9615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MLWWEEVEDCYBREDVQKKTFTKWVNAQFSKFGKQHIENLFSDL
QDGRRLLDLLEGITGQKLPKEKGSTRVHALNNVNKALRVLQKNYDDLVNIGSTDIVDG
NHLTLGLINNIILHWQVRWNKNINHAGLQQTNSEKILLSWRQSTRYPQVNVINFT
TSWSDGLALNALIHERPDLFDWNSVVCQOSATQRLEHAFNIAKYQLGIEKILDPEDV
ATTYPDKKSILMYITSLFQVLPQQVSIEAIQEVEMLPRPSQVTREEHFQIHHQMHYSQ
                                                                                                                                                                                                                                                   1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAM 09-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGG 9975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris (dog)

Canis familiaris (dog)

Canis familiaris

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

1 (bases 1 to 13887)

Carville, K.S., Mann, C.J., Schatzberg, S.J. and Wilton, S.D.

Direct Submission

Submitted (04-JUN-1998) ANRI, Pathology, University of Western Australia, Verdun Street, Nedlands, WA 6018, Australia

1. 13887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       congrentitiaaaacteeeateattreeetereraaaacacatrigeaagacaatacae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCGCAGGCT-GGGCC
                                                                                                                                                                   caaccrcaagcaaaargaccagcccargaararccrgcagarrarraarrgarcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGTGTCTCAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTTGTGACCAGCGCAGGCTGGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGG
                                                                                                   CAACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCAC
                                                                                                                                                                                                                                                                                                                       TATTTATGACCGCCTGGAGCAAGAGCACAACAATTTGGTCAACGTCCCTCTCTGCGTGGA
                                                                                                                                                                                                                                                   TATTTATGACCGCCTGGAGCAAGACCACAACAATTTGGTCAACGTCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9976 GCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 10017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF070485
Canis familiaris dystrophin mRNA, complete cds.
AF070488.1 GI:3982750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Canis familiaris"
/mol_type="mRNA"
/strain="breed Golden retrie"
/db_xref="taxon:9615"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="dystrophin"
/protein_id="AAC83646.1"
/db_xref="GI:3982751"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="dyst:
```

METVTMYTTREHILVKHAQEELPPPPCKKROLIVDSEIRKRLDVDITELHSWITRSE
AVLQSPEPAIYRKEGNESDLKEKVNAIEREKAEKFRKLODASRSAQALVEGWYNEGVN
ADSIGOASEQUASWATERCOLLESRLWINELSPONLITTPYNDCOLOLEGWTTABNWLKT
QPTTTSEPTAIKSOLKICKDEINRLSALQPOIERLYTPYNDCOLOLEGWTTABNWLKT
QPTTTSESPTAIKSOLKICKDEINRLSALQPOIERLYTPYNDCOLOLEGWTTABNWLKT
QPTTTSESPTAIKSOLKICKDEINRLSALQPOIERLKICSIALKEGGEWTLDADPYA
TYNHRYQVFADVOAREKELQTIFDSLPPMRYQETWSTILTWIQOSETKLSIPQVTVTE
YDINGSLGELGALGSSLQEOGNAKUR INTLKKWITEWDVPEKKEBPPALGDSEILKR
WKLSSQLVBEHQCKLEDGWAKUR INTLKKWITEWDVPEKKEBPPALGDSEILKR
WKLSGLVBETATVSELKYOLLSERHSWWITCHKWITTEWDVPEKKEBPPALGDSEILKR
WKLSGLVBETATVSELKYOLLSERHSWWITCHSETTENTWYGHLCTRLNGGKCWT
IEBVWACWHELLSYLEKANKYLSEVYCKLKTENIGASETLERDFTYNYGHLCTRLNGGKCWT
IEBVWACWHELLSYLEKANKYLSEVYCKLKTENIGASETLERDFTYNYGHLCTRLNGGKCWT
IEBVWACWHELLSYLEKANKYLSEVYCKLKTENIGASETLERDFTYNYGHLCTRLNGGKCWT
IEBVWACWHELLSYLEKANKYLSEVYCKLKTENIGASETLERDFTYNYGHLCTRLNGGKCWT
IEBVWACWHELLSYLEKANKYLSEVYCKLKTENIGASETLERDFTYNYGHLCTRLNGGKCWT
IEBVWACWHELLSYLEKANKYLSEVYCKLKKKEMLYGGGETARAULDSLENMACHSE
NPNQIRLLGOESLSSIDVQLAANYALADKVDAAQNPQRAQKTQSENICHENIGACK
YNGGEVVOSQLNHCVNLYKSLSSYNGSVERWNATTGRAADSHELTKRSAVEGNEDT
NPNQIRLLGOESLSSIDVQLAANARCHOHCRKYWYRGREMICBERKEMLDELLERGKOLDSIGNYTAKL
YNGGLAANYTERGQLECKLKLSRVMKREMAATTSHTARAATSHTRITTSHTAGAADILLKCLDDIEK
RETAGRYLLEPLEARIOCOVYDYTTNNYTTOMAGATGREADSHENIGATHSTALSHTERGAAN
NBDLCAGAANATSHTOLOGUESCHVANTEDDIEGRAANATSHTOLOGUSKWW
REISERTAGRERINGAANIAANGCHOHCRKYAUERELIDESSKOYTERTAGAALSHTERAGAGE
IBQTRAACHTOLOGYKHAALKOLDSOCKKKALIEISHYDMXLINGATAGKAT
RIBAGEACHOOLOGYGENENAYTERGOVNILYHTABESVAAMTERADNATHIRATOLOGUSKWW
REISERTAGRERINGAGGENAYTERGOVNILYHTAASTENIGGENAWATGOTOLGKW
RELEDVALGABERLEKKYNDELGKKKAELNATTGAGAGETILBATPAATSHTENIGGENAWATGOTOLGKU
REKLEOVALLABELLDAGGGENAWATGOTOLGGRANATABTOLGGENAWATGOTOLGKW
VANGACODVEGILLSKOGHLYKRACHERGONNIFYLMALSTENIGGRANATTOLLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGOTOLGGENAWATGO PERERAQUYTRILEROGENEVATORIES LEGIS LEGIS LEGIS PROVINCE PROVINCE AND ASSETT PRESENTATIONS AND ASSET AS LEGIS LEGIS LEGIS LEGIS PROVINCE AND ASSET AS LEGIS L

3'UTR repeat_region

/rpt_type=tandem
/rpt_unit="ca"

GACTITCCAGCAGITCAGAAGCAGAACGATGTACATAGGGCCTTCAAGAGGGAATTGAAA 0; Gaps Query Match 88.7%; Score 1154.4; DB 4; Length 13887; Best Local Similarity 93.0%; Pred. No. 0; Matches 1209; Conservative 0; Mismatches 91; Indels 0; (0 ጵ

쉱

첫 원

 \gtrsim ည

9082 9142 9202 9322 9382 9442 9502 9562 9682 721 361 481 541 661 781 841 901 961 301 9263 GACCTIGCTCGCCAACTCACTACGTIGGGCATTCAGCTGTCACCATATAACCTCAACACT CTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCATTGAGGACCGCATCAGG GTCCAGGGTCCCTGGGAGAGAGAGCCATCTCACCAACAAAGAAGTGCCCTACTATTATCAACCAC GAGACCCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCT GACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAGGAGACTGCAGGACTGCAGGACTGCAGAATGTCAGATCTCAGCTTACAGGACTGCCATGAAAACTCCGAAGACTGCAAGACTGCCATGAAAACTCCGAAGACTGCAG AAGGCCCTTTGCTTGGATCTCTTGAGCCTGTGGCTGCATGTGATGCCTTGGACCAGCAC AAGGCCCTTTGCTTGGATCTCTTGAGCCTATCGGCTGCATGCGATGCCTTGGACGCCACGCAC AAACTGAACGTGCACTCTGCAGACTGGCAGAGAAAATAGACGAGGCCCTCGAAAGACTC caddadciicaddaadcadadadadciddarcicaaaciacdicaddadadadidaic AAGGGATCCTGGCAGCCCGTGGGCGATCTCCTTCATTGACTCTCCCAAGATCACCTCGAG GACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACCGTATAACCTCAGCACT CTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGG GICCAGGGICCCIGGGAGAGACCAICICGCCAAACAAAGIGCCCTACIATAICAACCAC GAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCT AACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACT CAGGAACTICAAGAGGCCACGGAIGAGCIGGACCICAAGCIGCGCCAAGCIGAGGIGAIC AAAGTCAAGGACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAGGTGAGCCACGTCAAT GCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAA AAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAATAGATGAGACCCTTGAAAGACTC 8963 9023 9083 9203 9323 9383 9443 722 9503 782 9563 842 9623 242 9143 182 302 362 422 542 602 662 902 482 ò g 쉱 8 8 8 8 8 셤 8 8 8 G G ઠે g ò Ω δ g ઠે 셤 ò 8 6 ò

AACCTCAAGCAAAATGACCAGGGCCATGGATATCCTGCAGGTCATTAACTGTCTGACCACT 9683

ద

ATTTATGACCGCCTGGAGCAAGAGCACAATTTGGTCAACGTCCCTCTGCGTGGAT ATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAGGGAGGATCCGTGTC ATGTGTCTCAATTGGCTGCTGAATGTTTATGACACGGGACGAACGGGGAGGATCCGGGTC 9743 9803 1022 962 8 g δ 임

CTGTCTTTTAAAACTGGCATCATTTCCCTGTGTAAAGCACATTTGGAAGACAAGTACAGA CTGTCTTTTAAAACTGGCATCATTCTCTGTGTAAAGCCCATTTGGAAGACAAGTACAGA TACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGCGCAGGCTGGGCCTC TACCTCTTCAAGCAAGTGGCAAGTTCGACAGGATTTTGTGAACCAGCGCAGGCCTC CTTCTGCATGATTCTATCCAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGC 1082 1142 9923 1202 9863 ò 원 상 음 8 10042

CTCCTGCATGACTCTATCCAGATCCCAAGACAGTTGGGTGAAGTCGCATCGTTCGGGGGC

9983

셤

ò

```
9847
                                                                                                                                                            9487
                                                                                                                                                                                                                                9547
                                                                                                                                                                                                                                                                                                      9607
                                                                                                                                                                                                                                                                                                                                                                           1996
                                                                                                                                                                                                                                                                                                                                                                                                             1021
                                                                                                                                                                                                                                                                                                                                                                                                                                               9727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT 23-NOV-2002
                                                                                         9427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9907
CAGCTGCATGAAGCCCACAGGGACTTTGGTCCTGCATCCCAGCACTTCCTTTCCACTTCA 9367
                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                         961
                                                       721
                                                                                                                           781
                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Musinae, Mus
                                                                                                                                                                                                                     9848 TACCTITICAAGCAAGTGGCAAGTICAACTGCCTITIGIAGACCAGCGTAGGCTGGGTCTT
                                                                                                                                                  GAGACCCAAACCACTTGTTGGGACCACCCCAAAATGACAGAGCTCTACCAGTCTTTAGCT
                                                                                                                                                                                                                                                                                         902 AACCTCAAGCAAATGACCAGCCCATGGATATCCTGCAGATTATTAATTGTTTGACCACT
                                                                                                                                                                                                                                                                                                                                                                           AACCTCAAGCAAAATGACCAGCCCATGGATATCCTGCAGATAATTAACTGTTTGACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                              9668 ATTTATGATCGTCTGGAGCAAGAGCACAACAATCTGGTCAATGTCCCTCTCTGTGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTGTCTGAACTGGCTGCTGAATGTTTATGATACGGGACGAACAACAGGGAGGATCCGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AIGHGICTCAACTGGCTTCTCAAIGTTAATGATACGGGACGAACAAACAGGGAGGATCCGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CIGICITITAAAACIGGCATCATITCCCTGIGTAAAGCACATTIGGAAGACAAGTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTCTTTTAAAACTGGCATCATTTCTCTGTGTAAAGCACACTTGGAAGACAAGTACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1142 TACCTTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGCGCAGGCTGGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTICIGCATGATICIAICCAAAIICCAAGACAGIIGGGIGAAGIIGCAICCIIIIGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTCTGCATGATTCTAFTCAAATCCCAAGACAGTTGGTTGGAGGTGAAGTTGCTTTGGGGGC
                                                                                     GTTCAGGGTCCCTGGGAGAGAGAGTCTCACCAACAAAGAGGCCCTACTATATCAACCAC
                                                                                                                                                                                                GACCTGAATAATGTCAGATTCTCAGCTTATAGGACTGCCATGAAACTCCGAAGACTGCAG
                                                                                                                                                                                                                                                                    AAGGCCCTTTGCTTGGATCTCTTGAGCCTGTCAGCTGCATGTGATGCCTTGGACCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                             ATTTATEACCECCTGGAGCAAGAGCACAACTTTGGTCAACGTCCCCTCTGCGTGGAT
                                                                                                                           GAGACTCAAACAACTTGCTGGGACCATCCCAAAATGACAGAGCTCTACCAGTCTTTAGCT
                                                       GTCCAGGGTCCCTGGGAGAGAGCCATCTCGCCAAACAAAGTGCCCTACTATATCAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 13815;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chamberlain, J.S. and Harper, S.Q.
Mini-dystrophin nucleic acid and peptide sequences
Patent: WO 0229056.A. 2 11-APR-2002;
THE REGENTS OF THE UNIVERSITY OF MICHIGAN (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1262 AGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1135.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .13815
/organism="Mus musculus"
/mol type="unassigned DNA"
/db xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AX538582 13815 bp
Sequence 2 from Patent W00229056.
AX538582 AX538582.1 GI:25271088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (house mouse)
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87.3%;
92.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                             9428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9908
                                                                                                                                                                                                                                                                      842
                                                                                                                                                                                                                                                                                                                                                                             9608
                                                                                                                                                                                                                                                                                                                                                                                                                 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1202
                                                                                                                             722
                                                                                                                                                                                                782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1082
                      9308
                                                                                           9368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
AX538582
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                         8
                                                                              d
                                                                                                                       ò
                                                                                                                                                  g
                                                                                                                                                                                        \delta
                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                  \stackrel{>}{\circ}
                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8768 ACTAAAGAACCTGTAATCATGAGTACTCTGGAGACTGTGAGAATATTTCTGACAGAGCAG 8827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8948 AAATTGAACCTGCGCTCAGCTGATTGGCAGAGAAAATAGATGAAGCTCTTGAAAGACTC 9007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9128 AAAGTCAAGGCACTTCGGGGAGAAATTGCACCTCTTAAAGAGAATGTCAATCGTGTCAAT 9187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9188 gaccrigcacarcagcreaccacacresscarreascrereaccreraraaccreasscacr 9247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3248 TTGGAAGATCTGAATACCAGATGGAGGCTTCTACAGGTGGCTGTGGAGGACCGTGTCAGA 9307
                                                                                                                             PAT 11-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTTGGAAGGACTAGAGAACTCTACCAGGAGCCCAGAGAGCTGCCTCCTGAGGAGAGA 181
                                                                                                                                                                                                                                Mus misculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Musinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATITCCCAGCAGTTCAGAAGCAGAATGATATACATAGGGGCCTTCAAGAGGGAATTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCAGAATGTCACTCGGCTTCTACGAAAGCAGGCTGAGGAGGTCAATACTGAGTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGAACTTCAGGAAGCTGCCGATGAACTGGACCTCAAGTTGCGCCAAGCTGAGGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGGATCCTGGCAGCCCGTGGGCGATCTCCTCATTGACTCTCTCCAAGATCACCTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             542 CTGGAAGACCTGAACACCAGATGGAAGCTTCTGCAGGTGGCCGTCGAGGACCGAGTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACTITICCAGCAGITICAGAAGCAGAACGAIGIACATAGGGCCCTICAAGAGGGAATITGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTAAAGAACCTGTAATCATGAGTACTCTTGAGACTGTACGAATATTTCTGACAGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8828 CCTTTGGAAGGACTAGAAACTCTACCAGAGCCCAGAGAACTGCCTCCTGAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGAACTTCAAGAGGCCACGGATGAGCTGGACCTCCAAGCTGCGCCAAGCTGAGGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGTCAAGGCACTTCGAGGAGAAATTGCGCCTCTGAAAGAGAAAGTGAGCCACGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACCTTGCTCGCCAGCTTACCACTTTGGGCATTCAGCTCTCACGTATAACCTCAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                     Ishikawa, K., Asai, S., Takahashi, Y., Nagata, T. and Ishii, Y. Method for examining ischemic conditions
Patent: WO 0188188-A 904 22-NOV-2001;
School Juridical Person Nihon University (JP)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 6; Length 13815;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATTGAACCTGCACTCCGCTGACTGGCAGAGAAAAATAGATGAGACCCT
                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                          10043 AGTAACATTGAGCCGAGTGTCAGGAGCTGCTTCCAGTTTG 10082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           103;
                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1135.2;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
/mol_type="unassigned DNA"
/db_xref="taxon:10090"
                                                                                                                           AX306153 13815 bp
Sequence 904 from Patent WO0188188.
AX306153
                                                                                                                                                                                                                   musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 92.1%; Pre
Matches 1197; Conservative 0;
                                                                                                                                                                               AX306153.1 GI:17645441
                                                                                                                                                                                                                     Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9006
     1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                           RESULT 14
AX306153
LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
```

FEATURES

ORIGIN

δ 셤

ð 셤 g ò d ò 셤

ò

d

ò g

ò

δ 임 g ઠે g ò

ò

Matches 1197, Conservative o, Mismatches 103, Indels o, daps 2 dacrificondocorrana Conservative of Mismatches 103, Indels o, daps 2 dacrificondocorrana Conservative Activity Conservation Conservatio	0 61 121 121 181 181 241	######################################	TCTCACCGTATAACCTCAGCACT 541 TCTCACCGTATAACCTCAGCACT 9247 STGGCCGTCGAGGACCGAGCTCAG 601	
	Matches 1197 2 8708 62 8768 122 1828	8888 242 302 302 362 4422 9128	482 9188 542 602 9308 662 722 722 782	948 8 954 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9

ò	1082 CTGTCTTTTAAAACTGGC	1082 CIGICITITAAAACIGGCAICAITICCCIGIGIAAAGCACATITGGAAGAAAAAAAAAA	1141
qq	9788 CIGICTITTAAAACIGGG	9788 CIGTCTITTAAAACTGGCATCATTTCTCTGTGTAAAGCACACTTGGAAGACAAGTACAGA 9847	9847
λo	1142 TACCTTTTCAAGCAAGTG	1142 TACCTTTCAAGCAAGTGGCAAGTTCAACAGGATTTTGTGACCAGGGCGAGGCTC 1201	1201
QQ	9848 TACCTTTTCAAGCAAGTG	9848 TACCTITICAAGCAAGTGGGAAGTTCAACTGGCTTTTTGTGACCAGGGTAGGGTGGGT	9907
ò	1202 CTTCTGCATGATTCTATC	CTTCTGCATGATTCTATCCAAAATTCCAAGACAGTTGGGTGAAGTTGCATCCTTTGGGGGC 1261	1261
qq	9908 CTTCTGCATGATTCTATT	CTTCTGCATGATTCTATTCAAATCCCAAGACAGTTGGGTGAAGTTGCTTCCTTTGGGGGC 9967	1966
δ	1262 AGTAACATTGAGCCAAGT	1262 AGTAACATTGAGCCAAGTGTCCGGAGCTGCTTCCAATTTG 1301	
đ	9968 AGTAACATTGAGCCGAGT	9968 AGTAACATTGAGCCGAGTGTCAGGAGCTGCTTCCAATTTG 10007 .	
Search Job tin	Search completed: April 5, 2004 Job time : 3394.8 secs	5, 2004, 02:39:55	